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Sonoma Medicine

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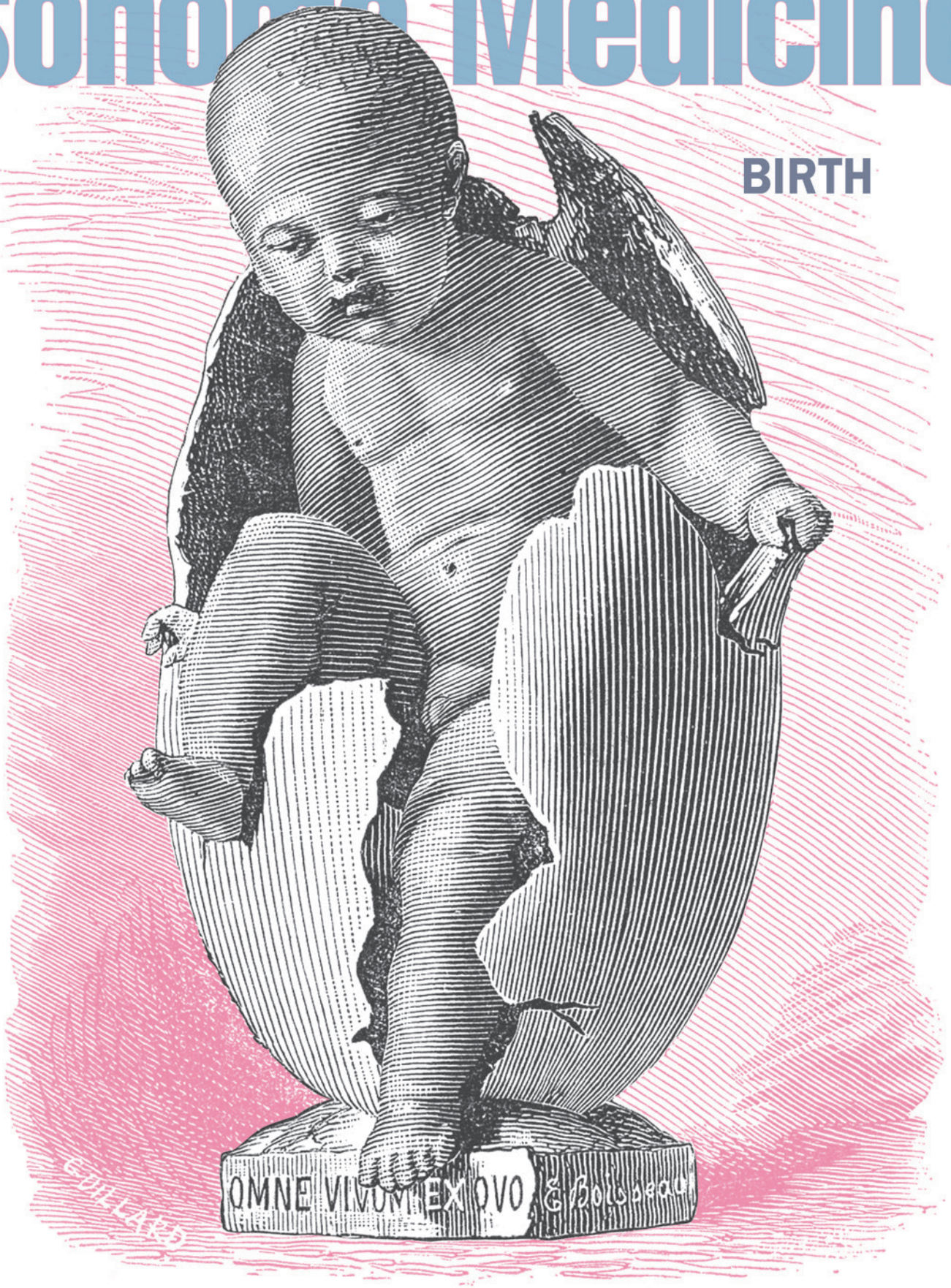

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Sonoma Medicine

The magazine of the Sonoma County Medical Association

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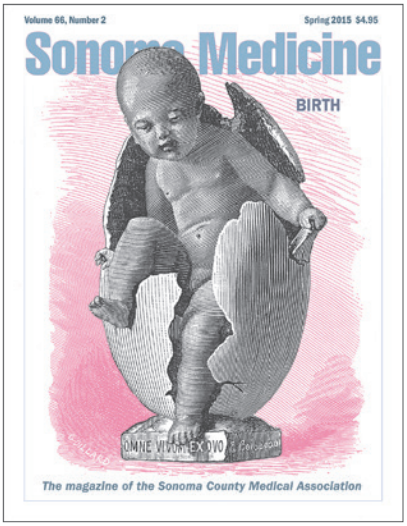

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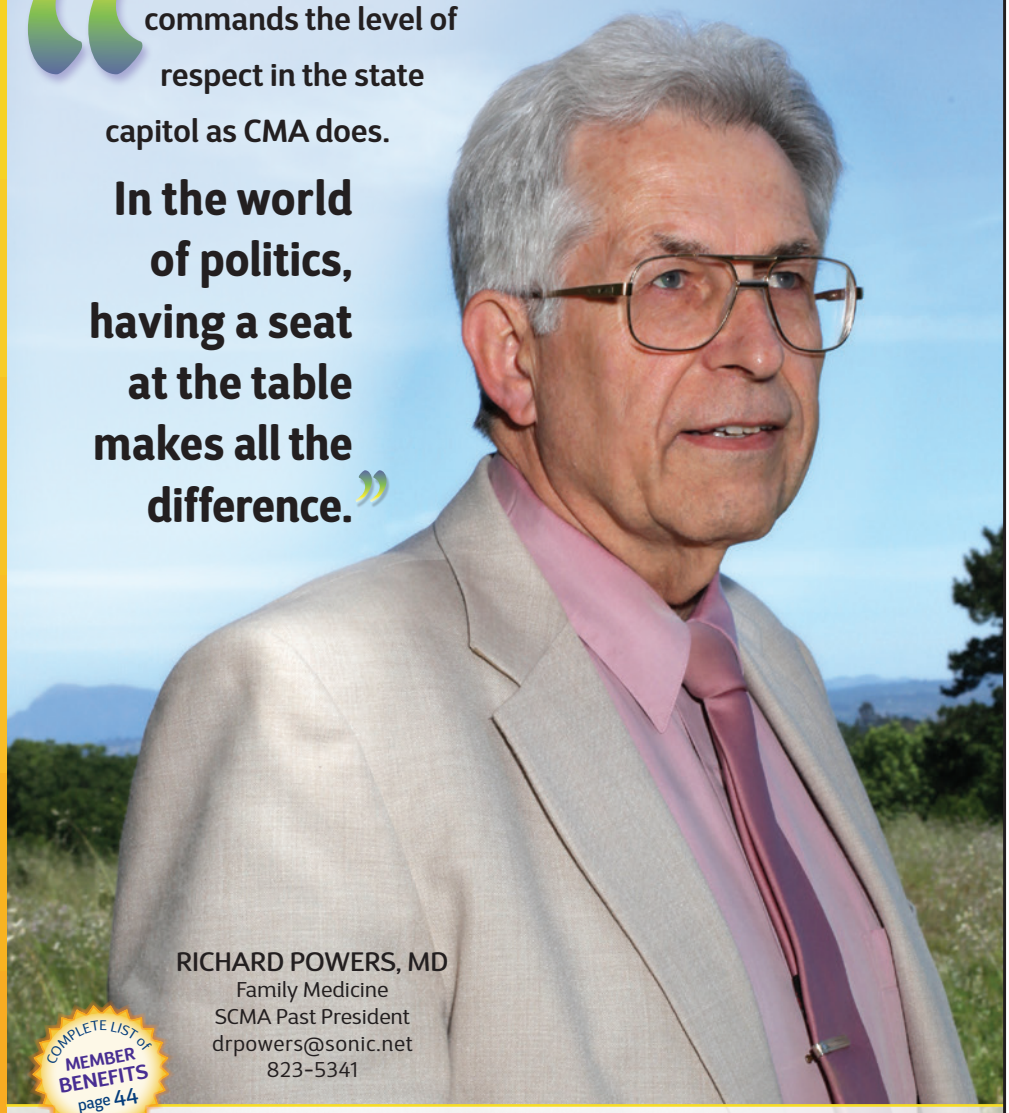

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Healthy Mom, Healthy Baby

Rachel Summer Claire Friedman, MD

The birth of a child marks one of the most momentous and, some might say, miraculous experiences of life. The bearing of children, however, is always accompanied by the bearing of risks, to both mother and infant. Childbirth was the leading cause of death for young women and infants up until the last century, and it unfortunately still is today in the highest-risk developing countries, where as many as 1 in 51 women have a lifetime risk of death during the peripartum and postpartum periods.

In the United States and other industrialized countries, both maternal and perinatal mortality rates have plummeted over the last century, making pregnancy and childbirth a largely safe and healthy experience for the vast majority of women and infants. This dramatic increase in the safety of birth is one of the top achievements of modern medicine.

Interestingly, the move of childbirth from home to hospital over the course of the 19th century and the development of obstetrics as a physician specialty in the early 20th century did not, by themselves, herald much improvement in safety numbers. Puerperal fever—in most cases caused unwittingly by physicians moving among deliveries and autopsies without gloves or handwashing—was largely responsible for the uptick in maternal mortality during the 19th century. Despite compelling evidence from Ignaz Semmelweis and Oliver Wendell Holmes that simply cleaning hands and clothes between patients could reduce puerperal fever deaths to near zero, the medical community resisted adopting the new behavior.

Dr. Friedman, a family physician at Kaiser Santa Rosa, serves on the SCMA Editorial Board.

Decades later, in the 1930s, the New York Academy of Medicine reported that hospital obstetric care had not, at that point, produced any measurable improvements in mortality for mothers or infants; women were still for the most part safer at home under the care of experienced midwives.[1]

Over subsequent decades, however, substantial improvements did finally lead to dramatic reductions in morbidity and mortality. Improvements included the eventual adoption of hand hygiene and sterile technique; better standards of training and obstetric skill; the discovery of antibiotics and medications to treat sepsis, hemorrhage and hypertension; the increasing safety of cesarean section; better prenatal care; and even vitamin D supplementation, which reduced cephalopelvic disproportion.

Where do we find ourselves in this early part of the 21st century? After decades of steady advancement, I would argue that the United States is again experiencing disturbing trends that may, like puerperal fever, be within our power as physicians to correct.

Childbirth in the U.S. is the most expensive in the world, and it constitutes the largest category of hospital payouts. Four million births annually lead to $50 billion in charges to federal and private insurance companies. The average total price for a hospital vaginal delivery is $30,000; it's $50,000 for a cesarean.

Yet according to the World Health Organization, the U.S. is one of just eight countries where maternal deaths *increased* over the past decade. The U.S. also has the highest first-day infant mortality rate of any country in the industrialized world—50% more than all other similar countries combined.

With 99% of women laboring and delivering in hospitals, with continuous fetal monitoring, easy access to IV fluids, antibiotics and anti-hemorrhagic medications, and the option of cesarean delivery at the earliest sign of fetal distress, it would seem that we have the best technology available. So why are mortality rates increasing?

The answer is, perhaps, related to all that technology. The modern-day medicalization of childbirth, and most of the training I received in residency, treats the very fact of labor and delivery as a problem waiting to happen. Where there is pathology lurking around every corner, we have the heroic interventions ready to save the day. This is fantastic news for all the high-risk deliveries, but not necessarily so for the average healthy low-risk pregnant woman entering the typical U.S. hospital in early labor.

Rates of cesarean delivery have skyrocketed over the last few decades, and now hover at 30% across most of the country, well above the World Health Organization's recommended 10–15%. Cesarean deliveries, especially repeat C-sections, pose increased risks to women; and as Dr. Mark Sloan reports in this issue of *Sonoma Medicine,* new evidence suggests increased risks to babies as well, with rising rates of asthma, Type 1 diabetes and inflammatory bowel disease correlated in children born via C-section.

What are we to do? We want the technology when we need it, just as we are grateful to live near cath labs and trauma centers when the need for them arises. But just as the ER is not the appropriate place to go for treatment of a viral upper respiratory infection, the hospital may not always be the safest place to deliver a baby, and C-section may not be the safest or most cost-effective method.

As midwife Elizabeth Smith explains in her article, birth centers and midwifery models of care for appropriately stratified low-risk pregnancies may help decrease C-section rates without leading to worse outcomes for mom or baby. And as Dr. Tara Scott reports, a growing number of pregnant women in Sonoma County—including a significant proportion of Sonoma County physicians—are looking at the evidence and choosing planned home births to reduce the possibility of complication and intervention for low-risk pregnancies.

Indeed, having access to familiar surroundings, the freedom to move in space and positioning, and to eat or drink at will (now supported by recent evidence), along with access to non-pharmacologic interventions and continuous labor support, may contribute to reduced need for medical intervention, lower perceived pains of labor, and increased likelihood of a vaginal birth, whether at home, a birth center, or a hospital.

Many factors have led to the rising rates of C-section: changing expectations of childbirth; pain management options; economic and health care system influences; available technology; reduced physician skill in forceps and vacuum-assisted deliveries; and an increasingly litigious society, to name a few. But as widely varying cesarean rates in different hospitals suggest, physician behaviors and the hospital setting itself may increase risk. The healthy nulliparous woman entering a hospital in early labor or for postdate induction may, depending on the location and people involved, walk into a snowballing array of interventions leading to complications brought to her low-risk birth by the perception of her otherwise normal physiology as pathology.

The best example of medicalizing normal physiology into pathology is the famous Friedman (no relation) labor curve. Published in 1955 and based on the observation of just 500 laboring women, Friedman's labor curve has defined "normal" labor progression and guided obstetric labor management ever since. Recent observational studies challenging his numbers have led to new ACOG guidelines that revisit normal labor progression as well as the very definition of active labor—the point at which interventions usually begin.

In a 2010 study of 233,844 newborns, researchers found that about half of all induced women who had C-sections for "failure to progress" had not reached 6 cm of cervical dilation—which by new guidelines indicates that they were not yet in active labor when their inductions were labeled as "failed" for not progressing.[2] Giving women more time and support to get to active labor could

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lead to more vaginal deliveries; in fact, the adoption of these new guidelines may reveal that the only thing "wrong" with many laboring women has been the erroneous time clock we have been insisting they follow.

What is our job in the rest of this century? As physicians, it is our responsibility to be lifelong learners, advocates for our patients, and leaders challenging the systems that derail the health of our patients and communities at large. We must look hard at the available evidence and ask ourselves: What can we do to continue to reduce the risks of childbirth for both mothers and babies? How do we continue to use the technology and interventions when needed, while honoring the normal physiology inherent in the birth process?

Let's start with prevention, because a healthy pregnancy begins before conception. We can offer effective contraception to prevent teen and unwanted pregnancies. We can counsel for smoking cessation, healthy diet and weight, increased physical activity, and cessation of substance abuse. In this issue, Jennifer McClendon, MPH, describes the success of Smoke-Free Babies, a Sonoma County program that offers services to pregnant women and new moms to help reduce smoking, thereby reducing risk to both moms and babies. And as obesity leads to increased risks for both mother and baby, Dr. Gail Altschuler offers a perspective on how physicians can help women maintain healthy weight throughout their childbearing years.

We can counsel women to choose the best setting for laboring, which for some women may not be at the hospital. We can help hospital labor and delivery floors have a more patient-centered, home-like environment, and encourage insurance coverage of evidence-based modalities like acupuncture, hypnosis and doula support to reduce the need for anesthesia and increase the likelihood of vaginal delivery. We can be mindful of how our own fears of what may go wrong and even the connotations of our medical jargon—*incompetent cervix, inadequate contractions, failure to progress*—may influence women's confidence in their own bodies. We can find more and better ways to educate, inform and inspire women to be empowered in planning for birth as well as in authoring their own empowering birth narrative, wherever and however that birth occurs.

Finally, we can support organizations and policies worldwide that will provide women in developing countries with the antenatal care, skilled birth attendants, and lifesaving medications and interventions that will help more achieve the ultimate goal of every birth: healthy mom, healthy baby. ◇

Email: rachel.sc.friedman@kp.org

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Cesarean Section and Long-Term Child Health

Mark Sloan, MD

In 1971, the year I graduated from high school, 6% of American children were born by cesarean section. By 2013 the cesarean rate had risen to 32.7%—a five-fold increase in little more than four decades. As a pediatrician, I witnessed that increase firsthand and, in general, welcomed it. I'd been in enough tense delivery room situations early in my career to see the increase as a positive change. More cesareans meant safer births for more babies, I thought. What could be bad about that?

I witnessed another trend firsthand during those decades: as the 1980s gave way to the 1990s and 2000s, the number of children with chronic inflammatory and autoimmune disorders steadily climbed. More and more of my young patients were diagnosed with asthma. Type 1 diabetes, previously a disease of school-aged children and teenagers, began to strike at younger ages than before—as young as 11 months in one memorable case. And although I didn't see much of it, inflammatory bowel disease was becoming more common across the country.

The rising incidence of inflammatory diseases in younger-than-usual children spurred a search for causative factors in pregnancy and early infancy, when the fetus and newborn are particularly sensitive to environmental insults. One obvious environmental trend was the increasing cesarean section rate, which roughly paralleled the increase in disease. Scientists began to wonder: could the two somehow be connected?

Dr. Sloan, who teaches pediatrics at the Santa Rosa Family Medicine program, serves on the SCMA Editorial Board.

Concerns about a possible link between cesarean section (CS) and chronic inflammatory diseases in childhood date to the early 1990s, after the Soviet Union disintegrated and previously isolated Eastern European countries opened to travel. As public health researchers fanned out across the old Soviet bloc, they noticed something odd: an "asthma gradient" that ran from east to west, with asthma much more prevalent in industrialized western countries than in the more rural, formerly socialist nations to the east. A child living in Sweden, for example, was significantly more likely to have asthma than a child living in Estonia—only a couple of hundred miles away.[1] A lot of analysis and a little out-of-the-box thinking eventually led to an unorthodox theory.

Researchers noted that while CS rates in Western European countries had risen sharply since the 1970s, those in the countries of the former Soviet bloc had remained low and relatively stable. Variation in national CS rates roughly matched the variation in asthma prevalence.

At about the same time the importance of the newborn gut microbiota to immune system development—and the idea that mode of delivery exerted a strong influence on the composition of the microbiota—were coming under scrutiny. Could the dots be connected? Could at least some of the asthma gradient—and by extension some of the variation in prevalence of other chronic inflammatory diseases—be explained by differences in Cold War birthing practices?

While the issue remains far from settled, current evidence appears to support a link between CS and a mild-to-moderately increased risk of diseases related to immune system malfunction. This article examines three of those diseases: asthma, type 1 diabetes and inflammatory bowel disease.

Asthma

Asthma is by far the most common chronic inflammatory disease of childhood and, with millions of American children afflicted by this disease, a pressing public health issue. As noted above, its prevalence has increased disproportionately in industrialized, more affluent nations compared with poorer and more rural countries. Asthma has been linked to a number of environmental factors, including air pollutants, indoor allergens, dampness and mold. To date, more than 30 research papers have examined a possible cesarean section-asthma (CS-A) link.

Initial studies found a strong association between CS and asthma. In a retrospective birth cohort, for example, Xu (2001) found that Finnish adults with current asthma were three times more likely to have been born by CS than by vaginal delivery (VD).[2] Methodological

problems dogged this and other early research: the failure to adjust for prematurity and a history of maternal asthma, known risk factors for both CS and child asthma, significantly clouded interpretations of the data. However, separate meta-analyses by Bager[3] and Thavagnanam[4] in 2008 arrived at similar, if less robust, conclusions: CS was associated with a 20% increase in risk of child asthma.

The majority of studies published since 2010—more statistically rigorous than their predecessors—have found a significant CS-A association. Recent retrospective birth cohort studies in Sweden[5] and Denmark[6]—involving a combined 2.2 million mother-child couplets—found that, similar to the 2008 meta-analyses, CS babies were about 20% more likely to be diagnosed with asthma in childhood than were vaginally born infants.

Problems with CS-A research persist, however. Asthma, particularly in infants and young children, can be difficult to differentiate from viral respiratory infections, a source of confusion that can lead to both over- and under-diagnosis. Diagnostic criteria can differ significantly between studies as well: health questionnaires or parental recall are used by some researchers; hospital admission or pharmacy registries by others.

Virtually all studies on the subject of CS and future child health are retrospective epidemiological studies, and so are more subject to bias and confounding than prospective studies. For example, significant factors like maternal smoking, a family history of asthma, and socioeconomic status may or may not have been accurately recorded in decades-old birth registries.

Finally, while epidemiological studies can show that an association exists, they cannot prove causation. Prospective studies with meticulous record keeping would provide a clearer picture, but the gold standard of medical research—a randomized controlled study allocating women to either cesarean or vaginal birth—is obviously impossible.

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Diabetes and IBD

Type 1 diabetes mellitus (T1D) is a progressive autoimmune disorder in which a T-cell-mediated autoimmune process targets and destroys pancreatic beta cells. The etiology of T1D remains elusive; genetic susceptibility and a number of environmental factors have been implicated.

The number of children living with T1D has increased dramatically in the last quarter century. During the 1990s the global incidence of T1D rose an estimated 2.8% per year.[7] The 2009 EURODIAB study predicted a doubling of new cases in European children between 2005 and 2020.[7] In the United States, the prevalence of T1D increased 21.1% between 2001 and 2009.[8]

The dramatic surge in new cases of T1D suggests that as yet unidentified environmental factors are to blame. The increase has been particularly steep among the very young (<4 years old), a trend that again led researchers to examine the prenatal and perinatal periods for possible answers. In 1992, Dahlquist was the first to demonstrate an association between T1D and CS.[9]

A 2008 meta-analysis of 20 studies demonstrated a 20% increased risk of T1D in CS-born children after adjustment for gestational age, birth weight, maternal diabetes and other potential confounders.[10] Since 2010, research in Canada, Germany and Australia has found similarly increased risks. Support for a CS-T1D association hasn't been universal, however: a recent Swedish study found that the association nearly disappeared when siblings were used as controls.[11] Still, the discussion among many diabetes experts has shifted from whether a CS-T1D association exists to exploring possible mechanisms for that association.

Inflammatory bowel disease (IBD) is a chronic inflammatory disorder consisting of two major phenotypes: Crohn's disease and ulcerative colitis. The etiology of these diseases is multifactorial, involving complex interactions of genes, the immune system, the gut microbiota and environmental factors. As is true for asthma and type 1

diabetes, the incidence and prevalence of IBD have risen significantly in the last 25 years.

Although not as well studied as the CS-A and CS-T1D associations, a half-dozen studies in Europe and Australia since 2009 have consistently demonstrated a mild-to-moderate increase in risk of IBD for CS-born children. A recent Danish national cohort study found the risk, adjusted for a number of possible confounders, to be increased by 29%.[12]

Possible Mechanisms

Hypothetically, if a causal link does exist between CS and at least some cases of chronic immune system disorders, what might be the mechanism(s)? Leading theories include (1) changes in the neonatal gut microbiota induced by CS, (2) inadequate immune system priming due to the absence or shortening of labor, and (3) other factors for which CS may simply be a marker.

Neonatal gut microbiota. The bacteria that colonize the neonatal intestine are known to play a major role in the development of the mammalian immune system. In experiments with germ-free mice, failure to normally colonize the gut at birth leads to severe defects in gut-associated lymphoid tissue, cell-mediated immunity, and antibody production.[13]

CS alters the gut microbiota by allowing bacteria from the skin and hospital environment to colonize the lower intestine, rather than the bacteria normally acquired from the maternal birth canal and perianal area in a vaginal birth. These abnormal bacteria suppress TH-1 activity and promote a pro-inflammatory TH-2 response, which in turn can lead to increased mucosal permeability, a situation that makes it easier for pathogens, endotoxins and food antigens to enter the neonate's bloodstream.[13]

Such disturbance of the gut microbiota can last months or even years—a critical period in immune system development—and may predispose a child to chronic inflammatory and autoimmune disorders.[13]

Absence or shortening of labor. The absence or shortening of labor in a cesarean section appears to affect a number of hormones that are known to play a role in stimulating the immune system at birth. In a vaginal birth, fetal hypoxia resulting from uterine contraction leads to a significant stress response, which in turn leads to very high catecholamine and cortisol levels in the neonate. These stress hormones play a key role in activation of the neonatal hypothalamic-pituitary-adrenal axis. A delay in HPA maturation could alter the early development of the immune system.[14]

In addition, the cord blood of babies born by elective CS (i.e., before onset of labor) has been found to be lower in neutrophils, lymphocytes and natural killer cells than that of their VD counterparts. Leukocyte activity is diminished as well; overall immune system function is hampered. Differences in lymphocyte function between CS and VD babies have been detected as late as one year of age.[14]

Although speculative at this point, it is possible that CS may also cause epigenetic alterations in the newborn that predispose to inflammatory

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disease later in life. Animal studies have shown that neonatal stress can lead to permanent epigenetic alteration via DNA methylation. A small Swedish study found that human infants delivered by elective CS had significantly elevated cord blood leukocyte methylation compared with VD newborns.[15] While the significance of these findings is unclear at present, it does suggest that the newborn epigenome is sensitive to perinatal influences.

Other factors. One factor for which CS may be a marker is antibiotics, which are known to cause marked and long-lasting alteration in the gut microbiota in infancy. As antibiotics are a routine part of a cesarean birth, it is possible that they (or other, as yet unidentified, iatrogenic factors), rather than the CS per se, may be responsible for at least some of the association between CS and chronic diseases.

Another factor is breastfeeding. Breast milk contains antibodies, leukocytes, probiotic bacteria and other immunologically active substances. CS is associated with lower rates of successful breastfeeding, which may contribute to delayed or abnormal immune system development.[16]

Disease Burden

If cesarean section does have a causal relationship with a number of chronic inflammatory disorders—and to reiterate, this has not been proven—how much disease could it actually cause?

Take asthma as an example. In a 2008 meta-analysis of 26 epidemiologic studies, Bager estimated that 1–4% of asthma cases could be attributable to CS.[3] Approximately 7 million American children currently have asthma. Using Bager's figures, CS could be responsible for between 70,000 and 280,000 cases.

A 25% reduction in the U.S. cesarean rate (i.e., returning to 2001 levels) could mean 20,000 to 70,000 fewer cases of asthma over an 18-year period. If the cesarean rate were reduced to the WHO-recommended level of 15% of all births, the reduction in disease could be proportionally greater.

Prevention of a relatively few cases of asthma may not be the whole story, however. Unaddressed in Barger's analysis is the issue of disease severity in children who were destined to develop asthma regardless of mode of delivery. If CS does put children at risk to develop the disease, it follows that it could also worsen the disease in children whose asthma is primarily due to genetic or other factors. It's possible that a reduction in cesarean sections could mean less severe disease for those CS-born children who would have developed asthma in any case.

Conclusion

While cesarean section has saved untold numbers of lives en route to becoming a nearly routine alternative to vaginal birth in the early 21st century, it may be accompanied by unintended consequences that are only now becoming evident.

A significant majority of recent research studies has found that an association exists between CS and a mild-to-moderately increased risk of several chronic inflammatory diseases in childhood, including asthma, type 1 diabetes, and inflammatory bowel disease. The extent to which CS may contribute to the overall burden of these and other diseases is unclear at present.

In emergent cases, that additional risk is worth taking, but a note of caution is warranted in elective situations as researchers seek to fully understand the impact of CS on the developing immune system. To quote Dr. Jose Saavedra of the Johns Hopkins Bloomberg School of Public Health, "The increasing recognition of cesarean section as a risk factor for chronic conditions that manifest themselves far beyond the perinatal period should foster increased awareness of these risks, and serve as additional argument against non-medically indicated cesarean section." ◇

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Planned Birth at Home

Tara Scott, MD

Think you know what type of woman has a home birth? Does she smell faintly of patchouli oil, eschew childhood vaccination and avoid the doctor's office in favor of alternative practitioners? You may be surprised to learn that a striking number of health care providers in Sonoma County are choosing to have their babies at home or in a birth center. These doctors and nurses understand odds ratios and interpret medical studies, and they are far from the "off-the-grid" stereotype that many physicians may hold about people who choose home birth.

Beah Haber, CNM, weighs Dr. Scott's son Theo shortly after his birth at home.

The last 100 years have witnessed a dramatic shift in where American women deliver their babies. At the beginning of the 20th century, the great majority of them had their babies at home. By the 1980s, that number had dropped to less than 1%, where it stayed for decades.[1] While the number of home births and births in a birth center in the United States remains quite low, the rate of planned births outside the hospital has doubled in the last 10 years to just over 1% of all births.[1] In Sonoma County in 2012, 208 out of 5,144 births (4%) happened outside the hospital (see table).[2] Of those, 89 (1.7%) occurred at a local birth center and 119 (2.3%) occurred at home—nearly twice the state average.

Dr. Scott, a family physician, practices at Vista Family Health Center and is an associate program director at the Santa Rosa Family Medicine Residency.

Even more surprisingly, it is estimated that close to 40% of all deliveries among graduates of the Santa Rosa Family Medicine Residency between 2005 and 2012 were planned home births.[3] Despite little to no exposure to home birth in their training—and plenty of exposure to hospital birth—these new physicians chose to have their own babies at home at a much higher rate than the averages for Sonoma County and California. The rate is so high that a local group called "Why Not Home?" is making a film that documents numerous health care professionals who are choosing home birth.[4]

A woman with a low-risk pregnancy may choose home birth for a number of reasons, including the midwifery model of care, the freedom to be in control during labor, and the high likelihood of a low-intervention labor that results in vaginal delivery. Not all women, however, desire an unmedicated, low-intervention birth, nor do they have a safe or comfortable home that is within a reasonable distance from the hospital should a transfer be necessary. Many women don't have a partner or family member who can or wants to play the important support role that is crucial for making home birth successful, and some of these women can't afford a doula who fills this role.

Many women who have babies at home are cared for by midwives. While midwives are a heterogeneous group with varying levels of certification and experience, they share a model of care that trusts in the physiologic process of labor, highly values the relationship between the midwife and the woman, and delivers intimate, watchful care throughout the pregnancy, labor and puerperium. Much of the care is delivered in the home before, during and after the delivery.

A 2009 Cochrane review including more than 12,000 women who were considered to be low risk compared the intervention rates, complications and mortality rates of midwives working in the hospital to those of physicians.[5] Women who had midwife-led models of care were less likely to be hospitalized

Births by Location, Sonoma County Residents, 2006–2013

	2006	2007	2008	2009	2010	2011	2012	2013
Total	**5,896**	**5,742**	**5,761**	**5,683**	**5,391**	**5,150**	**5,144**	**4,982**
Kaiser Santa Rosa	1,597	1,570	1,673	1,716	1,642	1,650	1,645	1,634
Petaluma Valley	499	537	509	456	452	413	417	414
Santa Rosa Memorial	1,240	1,198	1,150	1,053	958	908	864	798
Sonoma Valley	230	216	210	216	167	184	144	145
Sutter Medical Center	1,854	1,770	1,746	1,702	1,696	1,562	1,566	1,523
Santa Rosa Birth Center	112	89	127	112	111	80	89	82
Home birth	46	50	57	70	77	71	119	89
Birth in transit	0	5	2	2	2	4	3	1
Outside Sonoma County	312	308	287	356	286	278	297	296
Home birth %	**0.8%**	**0.9%**	**1.0%**	**1.2%**	**1.4%**	**1.4%**	**2.3%**	**1.8%**

Source: CDPH BSMF, 2000–2013

before birth or to have an epidural, episiotomy or instrumented delivery. Conversely, they were more likely to experience spontaneous vaginal birth, to feel in control during childbirth, to have a known midwife in attendance at birth, and to initiate breastfeeding. There were no statistically significant differences in maternal or fetal/neonatal deaths between the two groups. While this review was focused on midwives practicing in the hospital setting, it demonstrates the safety and efficacy of the midwifery model of care.

Women who choose midwifery care for birth outside the hospital may believe that this model can safely reduce intervention without compromising their safety or that of their child. As Dr. Brooke Vezino (Santa Rosa residency class of 2009) writes: "My experience as a family medicine maternal health provider only solidified my belief in birth as a natural process, my own body's ability to manifest that process, and my connection to generations of women before me. . . . I felt most safe outside of the hospital but under the care of a trained midwife who had been practicing 17 years. . . . During my pregnancy with Liam, I saw how much the midwife did to truly shepherd me through my own personal experience, and that was profoundly important."

Many women who choose home birth also want the freedom to be in control of what they do during labor. In choosing home birth for her second child, Dr. Ann Figurski (residency class of 2010) recalls, "I wanted the option to get in a tub and soak during labor, which was not an option at the hospital. I had a long labor with my first, and was hoping that my second would be shorter—and if it wasn't, that I would be more comfortable at home. . . . I wanted to sleep in my own bed after giving birth, and eat the healthy, delicious food already at my house."

Women who give birth at home may also want to involve their older children in the process and may feel more able to assume comfortable positions, wear whatever they like, and make whatever sounds they feel may help them cope with the intensity of labor. As Dr. Connie Earl (residency class of 2010) observes: "At home . . . I was able to be completely uninhibited and be loud while I marched up and down the stairs, two at a time, to get the baby to turn."

While it is unlikely that we will ever have randomized, controlled trials comparing the safety of home and hospital birth, there is data from observational studies and meta-analyses that women and their providers can turn to for guidance. It is important to recognize that, on the whole, appropriately selected women who choose home birth are, by definition, lower risk than women who deliver in the hospital, which can make interpreting observational data challenging. Nonetheless, the data can be used to measure the risks and benefits of planned birth at home.

Women who plan to deliver at home, regardless of where they ultimately deliver, have a markedly lower risk of giving birth by cesarean section—in some studies as much as 50% lower than do women having planned hospital births.[6–8] At least some, though by no means all, of this decreased risk of cesarean section can be attributed to the lower risk profile of women who plan home birth.

The literature also suggests that women who plan home birth are five times less likely to receive an epidural, undergo episiotomy or have an operative vaginal delivery. Woman who plan to deliver at home have a significantly decreased risk of infection, serious perineal lacerations and cord prolapse when compared to planned hospital birth. Also, the risk of both maternal and perinatal mortality in home birth is equal to that of planned hospital birth.[7]

On the downside, a large, multicountry meta-analysis from 2010 examining the safety of planned home versus hospital delivery found a nearly threefold increase in the risk of neonatal death (death in the first month of life) among normal babies intentionally

born at home. To put this in absolute terms, the researchers reported that neonates die at a rate of 4/10,000 after planned hospital birth compared with a rate of 15/10,000 among babies born after planned home birth.[6]

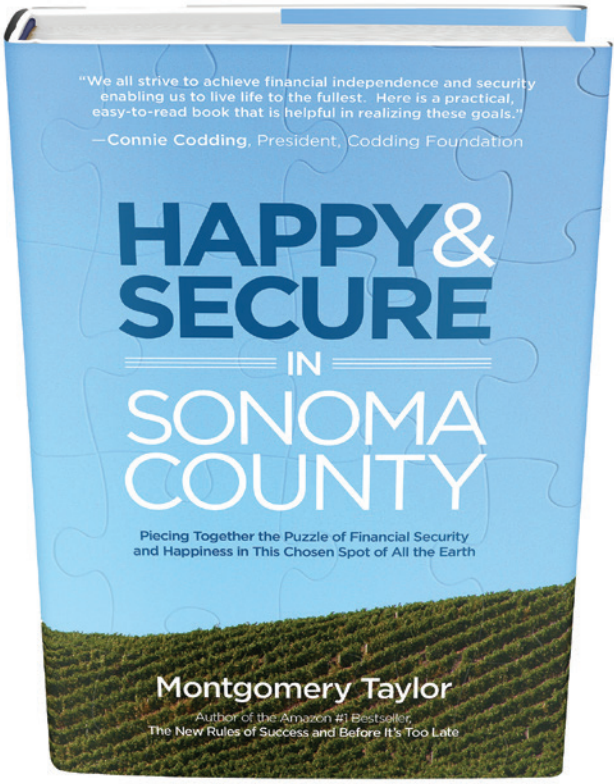
This data prompted the American College of Gynecologists and Obstetricians to reaffirm their 2011 statement stressing the risks of home birth.[9] However, when the data were analyzed with only trials in which certified midwives attended the births at home, there was no significant difference in neonatal mortality between the home and hospital birth groups.[6] While the quality of the 2010 meta-analysis is debatable, and the applicability of its findings to home birth in the United States unclear, even the hint of increased death in the first month of life is a devastating outcome by anyone's measure.

Many would argue that any increased risk of neonatal death, however small, is too great. But it is critical to keep the low absolute level of risk in context when weighing all the risks and benefits. If the outcomes of a healthy baby and a low-intervention, unmedicated birth at home are what a woman desires, the studies suggest overwhelmingly that a planned home birth has a high likelihood of success.[6,7] Moreover, when a certified midwife attends the birth, the safety may be equal to that of hospital birth.[6] As Dr. Earl notes, "We chose home birth because it was what we were most comfortable with. I worked as a doula before medical school so I attended hospital births, birth center births and homebirths. By the time I was in residency, I had seen the complications hospital births can bring to low-risk births, and I felt that as a low-risk pregnancy, we were likely to have a less complicated experience at home."

The idea of home birth can be difficult for some physicians to grapple with. On the whole, we get little exposure to home birth, or the exposure we do receive involves only the most complicated cases. But if we look at another obstetrical intervention doctors are more familiar with, "trial of labor after cesarean section" or TOLAC, we find that they commonly engage in the type of risk/benefit analysis described above when considering maternal and neonatal outcomes from TOLAC.

Pregnant women who have had a previous cesarean delivery may be offered a "trial of labor" if their providers and local hospital are able to offer the standard of care. Despite the higher risks of TOLAC to both mother and baby (including maternal infection, uterine rupture and neonatal injury or death), successful TOLAC reduces the overall risk of complications when compared to planned repeat cesarean section.[10]

Like women who choose home birth, women who choose a trial of labor after cesarean accept these increased risks because they highly value the outcome of a vaginal delivery and a healthy baby and are counseled that, if accomplished, a successful vaginal birth is likely to result in fewer complications than a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planned cesarean section.[10] Many physicians agree that offering a TOLAC to appropriately selected women is a rational choice, given the low risk of complications and the high likelihood of success.

In a 2013 position statement, the American College of Gynecologists and Obstetricians reaffirmed their previous position from 2011 that "hospitals and birth centers are the safest setting for birth," but they "respect the right of a woman to make a medically informed decision about delivery."[9] Furthermore, "women inquiring about planned home birth should be informed of its risks and benefits based on recent evidence."

A 2013 position statement by the American Academy of Pediatrics echoes these opinions.[11] The American Academy of Family Practice has no official position statement on home birth as yet, but the American College of Nurse Midwives supports the safety of home birth, stating: "Certified Nurse Midwives and Certified Midwives are qualified to provide antepartum, intrapartum, postpartum and newborn care in the home."[12]

Several potential disadvantages of home birth should be mentioned. Insurance coverage for home birth is widely variable, and the cost can be prohibitive for uninsured women or women whose insurance does not cover home birth. When transfer to the hospital occurs (about 11% of the time, according to one study) some women have a negative experience, even when transfer results in a healthy baby and mom.[7] Women who transfer from home during labor may feel judged by the nurses, house-staff or physicians due to personal beliefs or lack of familiarity with the home birth process.

In addition, since the style of care is so different, the partnerships that are formed between the midwife, the laboring woman and her partner can be seriously disrupted once the birthing process moves to the hospital. As Dr. Earl reflects, "The thing that struck me the most when we went from home to hospital was how pushed out of the way Russ [my husband] was. We had been a team at home . . . . When we arrived at the hospital, he was handed papers and then given a place in the corner to rest. There were people physically between us while they put in my IV and prepped for the epidural."

Given all the risks and disadvantages, why do some health care providers choose home birth? Perhaps our familiarity with the difficult task of separating true absolute risk from the emotional aspects of any risk makes us able to put the pros and cons of home birth in perspective.

In the interest of full disclosure, I am also one of those physicians who chose to have a home birth. With the support of my partner, Travers, our experience of pregnancy, labor and the birth of our son, under the experienced and watchful care of our midwife, was nothing short of transformative. Our preparation, our teamwork, the intensity of the labor process, our joy at the birth and then our comfort being in our home when it was all over remain highlights of our lives. We both gained confidence and a sense of self-efficacy. I can't help but wonder what is lost by a system that creates barriers to low-risk women and their partners or family who want to experience labor and delivery in this way.

For Dr. Vezino, her mother's positive experience with home birth influenced her own perceptions of labor and childbirth. "Since I had been present at my brother's home birth as a 4-year-old, and since I was told the story of an empowering and safe labor, I was already predisposed to be open to home birth." I think as physicians, it's worth considering how these positive narratives of birth passed down from mother to child might shape our future generations' approach to childbirth.

As physicians who may serve patients who have had home birth, or are planning for it, we should be aware of our personal biases, familiarize ourselves with the data and its limitations, and engage in a balanced discussion with our patients. Whenever possible, doctors and other providers

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should make their best effort to create a bridge: gaps can occur when patients seek care at the fringes of the medical establishment. We have the power to fill in those gaps. Our goal should be to give women who choose to have their babies at home the same well-integrated, patient-centered care we strive to provide for all our patients. ◇

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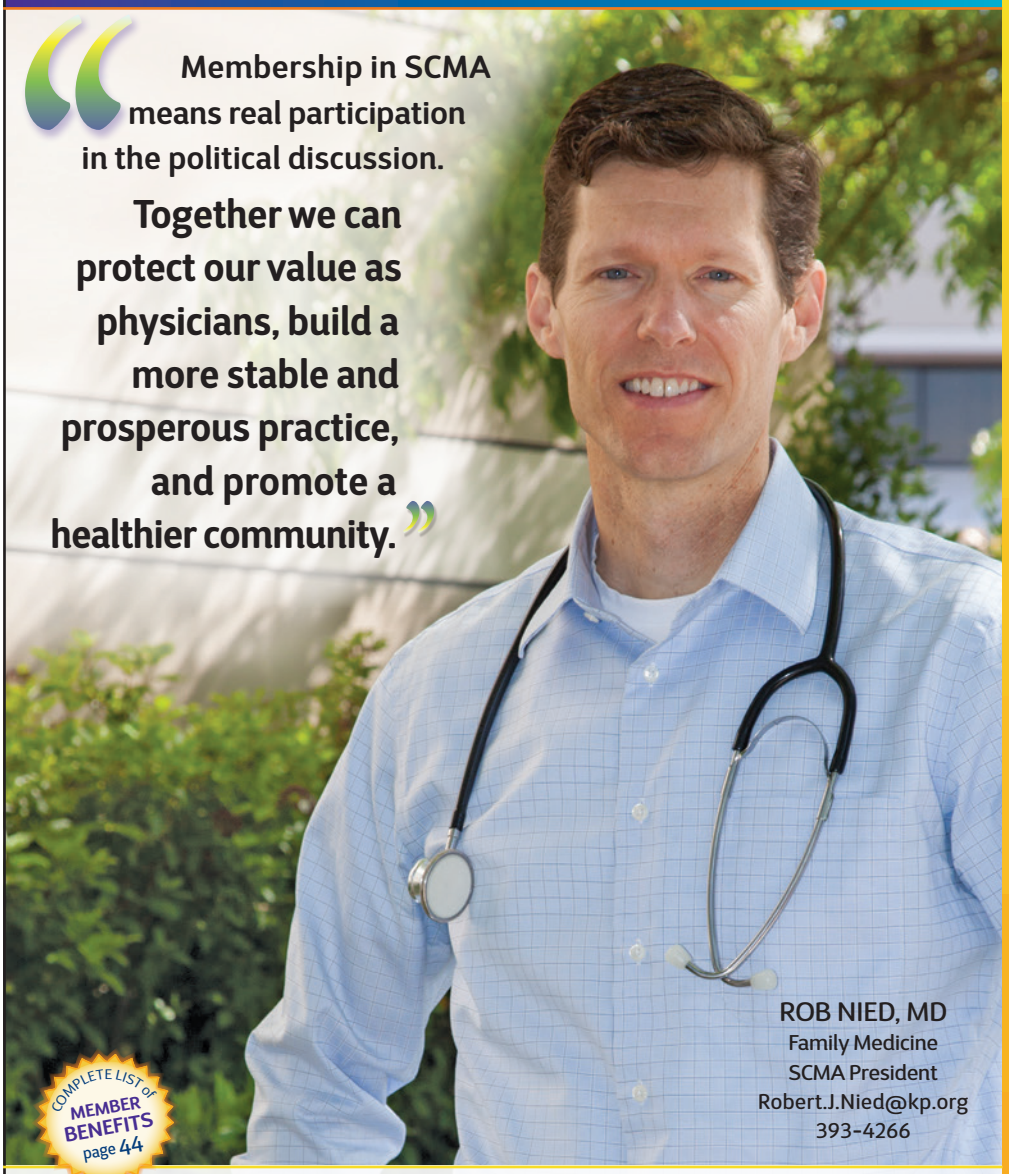
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In the Space Between Home Birth and Hospital

Elizabeth Smith, CNM

On the first of January, people celebrate the New Year with parties, champagne and "Auld Lang Syne." For Santa Rosa couple David Chernus and Crystal Reed, Jan. 1, 2015, brought a far different beginning: the birth of their daughter, Franklynn Robin Chernus. Born at 1:10 a.m., the 7-pound, 19.5-inch infant was delivered at the Santa Rosa Birth Center and holds the honor of being Sonoma County's first birth of the year.

David Chernus, Crystal Reed and their daughter Franklynn.

Birth centers remain a source of confusion for much of the public, despite considerable evidence for their safety, cost effectiveness and patient satisfaction. Sonoma County is particularly blessed with two birth centers. Santa Rosa Birth Center, the second oldest birth center in the state, has operated across from Howarth Park for more than 20 years. A new birth center, Thrive Center for Family Wellness, opened its doors last year, on Old Redwood Highway. Even with the increased presence of birth centers in the immediate area, many people wonder what a birth center is, and what it seeks to do.

What is a birth center?

The American Association of Birth Centers (AABC) defines a birth center as a "homelike facility existing within a health care system with a program of care designed in the wellness model of pregnancy and birth." Birth centers operate in the space between home birth and hospital, combining the low-intervention, natural approach of home-birth with access to a hospital if needed. Birth centers care for medically low-risk women before, during and after normal pregnancy and delivery. The centers use an evidenced-based risk assessment tool to identify when mothers become too high-risk for birth center care. Most birth centers also provide comprehensive women's health care that extends beyond maternity care and includes well-woman screenings, family planning and gynecological needs.

The goal of birth centers is to provide high quality maternity care with a holistic, individualized approach. Practically speaking, birth center practices are small and offer a more intimate experience than a hospital. They focus on making the birth experience special, facilitating family involvement, limiting unnecessary interventions, and providing as much control and individualization as medically possible.

What are midwives?

Birth center care represents a collaborative model. Midwives, the primary providers, work with physicians and hospitals to provide comprehensive services. Midwives are medical professionals who have received extensive training in the care of healthy pregnancy and birth. They view childbearing as a normal physiologic process and focus their attention on maintaining normalcy within the context of evidenced-based care.

While there are different types of midwives, the AABC states that most midwives practicing in California birth centers are certified nurse midwives. CNMs are registered nurses with graduate-level education in midwifery; they have passed the national board certification exam and provide general women's health care throughout a woman's lifespan. CNMs have full prescriptive authority, hold hospital privileges, have insurance contracts and maintain malpractice coverage. Many birth center CNMs hold concurrent credentials at their local hospital so they can care for patients who prove to be too high-risk for the birth center facility. The AABC Birth Center

Ms. Smith, a certified nurse midwife, is the director and owner of the Santa Rosa Birth Center.

Standards require accredited birth centers to disclose the type and qualifications of the providers rendering care at the birth center.

Santa Rosa Birth Center only employs CNMs, all of whom attend births at both the birth center and Sutter Santa Rosa Regional Hospital. Midwives at the Thrive Center for Family Wellness are licensed midwives (LMs) and certified professional midwives (CPMs). They have a more limited scope of practice and attend births at their birth center and at home.

All midwives rely on their physician colleagues to collaborate, co-manage or accept care of women who require treatment beyond the well-defined scope of midwifery practice. Indeed, the Standards of Birth Centers published by the AABC requires that a physician/midwife relationship exist in order to provide safe and effective care. Santa Rosa Birth Center has a formal relationship with the family practice physician members of the Santa Rosa Community Health Centers obstetrics team that allows for consultation and/or transfer of care if needed. Patients do not get to meet their physician before transfer, however. Local midwives also maintain informal collaborative relationships with Sonoma County obstetricians, pediatricians and neonatologists.

In addition to medical providers, the birth center model includes an interdisciplinary team to provide direct and ancillary support services. These roles can include educators for classes on childbirth and parenting; trained therapists to address family needs as they arise; and lactation support specialists for postpartum breastfeeding support. Birth centers also offer services like yoga classes, birth plan assistance and informal support groups. The focus is client-driven care across a full spectrum of interests.

Are birth centers safe?

"But what if something happens during labor?" As with hospitals and outpatient surgery centers, regulations and published standards of care dictate the specific training, supplies and medications birth centers are required to have for each delivery. Careful, ongoing monitoring of mom and baby, as well as emergency medications, IV fluids, resuscitation equipment, and established physician back-up provide the necessary backdrop to all care. In the case of an emergency situation, providers and staff are trained and experienced in the provision of emergency care and stabilization while awaiting EMS transport. This includes the administration of emergency medications and full neonatal resuscitation as per NRP guidelines.

Several well-designed studies have established the safety of birth center care. The recent National Birth Center Study II,[1] a prospective study of over 15,000 women in 79 midwife-led birth centers across the country, found a 16.8% maternal transfer rate, 6% Cesarean section rate, and intrapartum fetal and neonatal mortality rates of 0.47% and 0.04% respectively. It is important to note that the study did not include a hospital cohort for comparison. However, these findings are consistent with other studies comparing location of birth, midwife-led care and obstetric care, all of which corroborate that midwife-led birth center care is a safe option for medically low-risk women.[2–8]

Birth centers use a model of care that supports wellness and physiologic birth and a diligent practice of risk assessment. This combination works to keep women healthy and low-risk while allowing early detection and treatment of potential complications. Identifying those women for whom a birth center birth is not appropriate lies at the base of this approach. The collaborative model of care allows co-management of these higher-risk pregnancies in the hospital by a CNM and a physician. At other times, risk guidelines require the complete transfer of care to the physician collaborators.

Safety at the Birth Center

In the Santa Rosa Birth Center's 21-year history, our CNMs have overseen 3,422 births. In 2014, they managed 138 births. Of 101 laboring women admitted to the Birth Center, 84 births occurred within the facility. Fifty-four Birth Center clients delivered in hospital. Of these births, six were managed by Birth Center CNMs and the remaining were managed by the collaborating MD/CNM hospital practice. Thirty-seven were planned hospital births and 17 (16% transfer rate) were transferred in labor or postpartum after admission to the Birth Center. Of the 17 transfers, 98% were transferred because of failure to progress, 1.5% for pain management with no abnormality for mother or infant, and 0.5% for postpartum bleeding. There were no maternal or fetal/infant deaths, and the cesarean section rate for all Birth Center patients was 6%.

These outcome data are comparable for all the births at the Birth Center since its inception in 1993. Furthermore, our 2014 statistics are comparable to yearly national data published by the CDC, as well as data from the National Birth Center Study II.[1]

There are other benefits of birth

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centers beyond positive medical outcomes. One of the most striking is the breastfeeding rate. Ninety-nine percent of our clients are breastfeeding at six weeks postpartum; 97% are exclusively breastfeeding. At one year postpartum, 55% continue to breastfeed.

How are birth centers regulated?

A common misconception is that birth centers have no external regulation or governmental oversight. This simply is not true. Birth centers are subject to local, state and national laws concerning the practice of medicine and midwifery. The AABC publishes the Standards for Birth Centers that forms the foundation for the safe functioning of birth center facilities. An independent authority, The Commission for the Accreditation of Birth Centers, uses these standards to evaluate birth center care and to accredit individual birth centers. While some states, including California, permit birth centers to operate without accreditation, most birth centers are accredited through the CABC. The Santa Rosa Birth Center has been accredited since 1997; accreditation for the Thrive Birth Center is in process.

In addition to national accreditation, California licenses alternative birth centers through the Department of Public Health, but does not require this licensure for business. California-licensed birth centers are required to comply with the Health and Safety Code, which mandates that birth centers, among other things, adhere to the AABC Standards of Care and undertake the voluntary process of licensing. The Santa Rosa Birth Center is licensed; licensure for the Thrive Birth Center is pending.

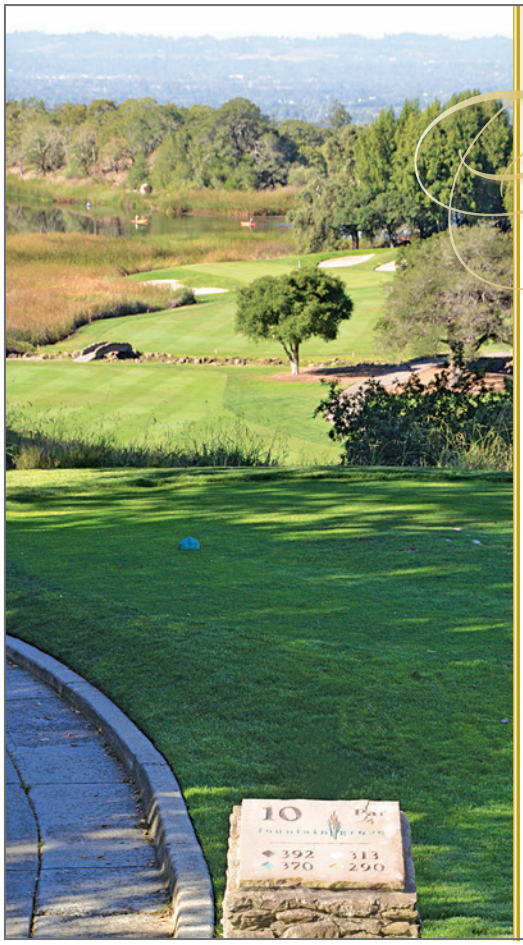
How much do birth centers cost?

Because of the nature of birth center care—its "low tech" approach, smaller physical facility and lower overhead charges—the cost of a birth center birth is significantly lower than that of a hospital birth. Most birth centers work with insurance plans to maximize coverage for services rendered. In California, Medi-Cal reimburses birth center care in full, along with maternity services provided by CNMs. Insurers—such as Anthem Blue Cross, Blue Shield, Cigna, Aetna and United—also cover care rendered by midwives in birth centers, as well as the birth center facility fees.

On a larger scale, the cost savings of birth center care is a primary reason advocates for health care reform embrace the birth center model. The National Birth Center Study II estimates that the cost savings from reduced cesarean section and lower intervention rates among the 15,000 study participants was nearly $30 million.[1]

Who seeks birth center care?

"We wanted as natural and noninvasive a birth as possible," says Crystal Reed when describing her family's reasons for choosing a birth center. This desire for a natural birth is frequently expressed by birth center clients. Although some people choose birth centers to reduce costs, most choose this type of care because they want a



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natural, physiologic birth. Parents who choose a birth center prefer to avoid the perceived inconveniences of the hospital: unknown staff; unfamiliar routine and invasive procedures; lack of flexibility to respond to family desires; routine separation of mom and baby; and requirements for a prolonged postpartum stay.

During their pregnancy, the nature of birth center care allows families to develop a relationship with their midwives that fosters trust and a sense of safety. The birth center facility is important as well. It is a homelike environment. Mothers can labor in an atmosphere that is familiar rather than clinical. They can return to their own home within 6–8 hours of birth if baby and mom are doing well. They know that going home is safe because they can call the midwife at any time and will receive a home visit within the first 24 hours and regularly throughout the first week.

There is no one-size-fits-all when it comes to birth. The choice of where to birth and how is an intensely personal decision that should be based on the desires of the pregnant mother in collaboration with her family and health care provider. In most instances, an otherwise healthy woman with a low-risk pregnancy is a candidate for a birth center birth. But pregnancy and birth is a dynamic experience influenced by a woman's medical condition, emotional needs and fiscal reality. Birth centers exist as part of the health care system, not outside of it. When licensed and accredited, they are a safe and cost-effective alternative to hospital or home birth, and represent one option on the continuum of birth choices. ◇

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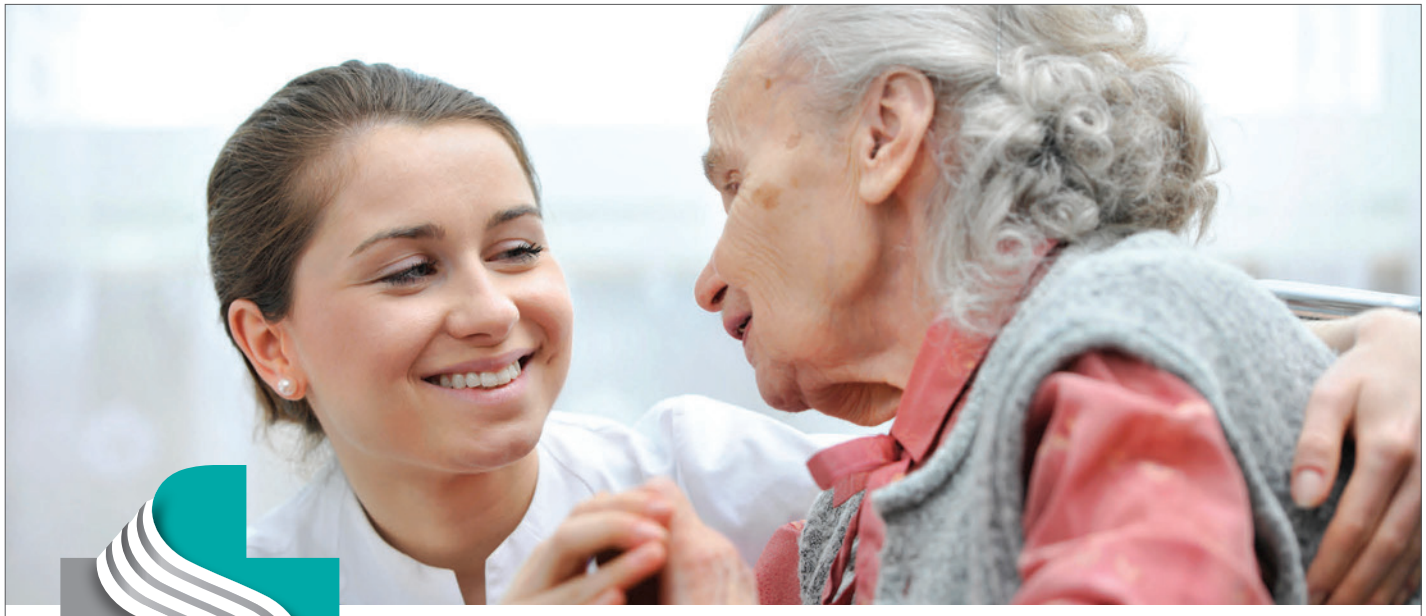

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Weight Loss and Pregnancy

Gail Altschuler, MD

Physicians understand the negative health consequences of being overweight, including a higher incidence of heart disease, diabetes, cancer and back pain, to name a few. Another consequence is the effect of weight on fertility, fertility treatment and pregnancy, as well as the ongoing health of mother and child.

Infertility, for example, is significantly higher in women who are overweight, and it increases as their BMI rises.[1,2] Attempts to become pregnant through escalating interventions become ever more physically, financially and emotionally costly. These costs become statistically significant, and they are more pronounced at higher BMIs, especially if there is central obesity.[2]

Obesity brings multiple physiologic changes that affect fertility and pregnancy, including changes in estrogen, testosterone, and LH/FSH ratios. Leptin, insulin and multiple inflammatory cytokines are also affected. These contribute to abnormalities of ovulation; abnormal egg, embryo and endometrial development; unsuccessful implantation; and failure to maintain a viable pregnancy.

Dr. Altschuler, a family and bariatric physician, is medical director of the Altschuler Center for Weight Loss & Wellness in Greenbrae and Novato.

Male fertility is also negatively affected by obesity. The prevalence of male infertility is increasing, as evidenced by decreasing sperm counts throughout the world. It has been estimated that sperm counts have fallen by as much as 1.5% each year in the United States, a finding also noted in other Western nations.[3] Health, volume and motility of sperm are all affected. Although the cause is uncertain, proposed explanations include increasing obesity and exposure to environmental toxins.

Women who are underweight (BMI <19) often have difficulty conceiving as well. After ruling out underlying illness or eating disorders, it is generally easier for this population to reach an ideal weight and improve their odds for conception. For all groups, an ideal body weight results in the best outcome for fertility and fertility therapy, as well as maternal and fetal health.

Other potential complications that overweight and obese women face around pregnancy and birth include:[4,5]

- Irregular periods
- Difficulty or inability to conceive
- More complicated IVF cycles
- Lower IVF success and greater complications of pregnancy for those who do conceive
- Higher frequency of early pregnancy loss
- Greater anesthesia and surgical complications if surgery is required
- Greater frequency of hypertension, gestational diabetes, preeclampsia, stillbirth and other complications of pregnancy. Rates of stillbirth are twice as high in obese patients as in normal weight patients.
- Increased risk of cesarean section delivery. The C-section rate is almost 50% in obese women, and the postoperative complications following C-section are significantly higher as well.
- Due to larger babies, greater delivery complication rate for women delivering vaginally
- Lower prolactin leading to decreased nursing
- Higher risk of maternal diabetes

Consequences for the newborn into adulthood include fetal macrosomia, pneumonia, lifelong risk of obesity and its consequences, behavioral problems, and risk of asthma.[6]

In the face of all these potential complications and adverse effects, reduction in BMI through weight loss has been demonstrated to improve fertility and fertility therapy success and to lower complications of therapy and pregnancy.

Women often ask for help with weight loss when they are considering pregnancy. Many of them

understand that pregnancy will be easier if they don't carry extra weight.

Recently I helped care for a patient who had tried unsuccessfully to become pregnant during the past year. I chose her as an example because she might not be considered a typical candidate for weight-loss therapy, yet the intervention in her case turned out to be simple and effective.

She had already been to an infertility specialist and was told she had a fibroid uterus. She had a long history of irregular or missed periods and a diagnosis of polycystic ovary syndrome. Her initial BMI was only 26.5, but her waist circumference was 36 inches. (Central obesity is often characteristic of women with impaired fertility.) The patient also had a high-stress job, many hours of driving and little physical activity.

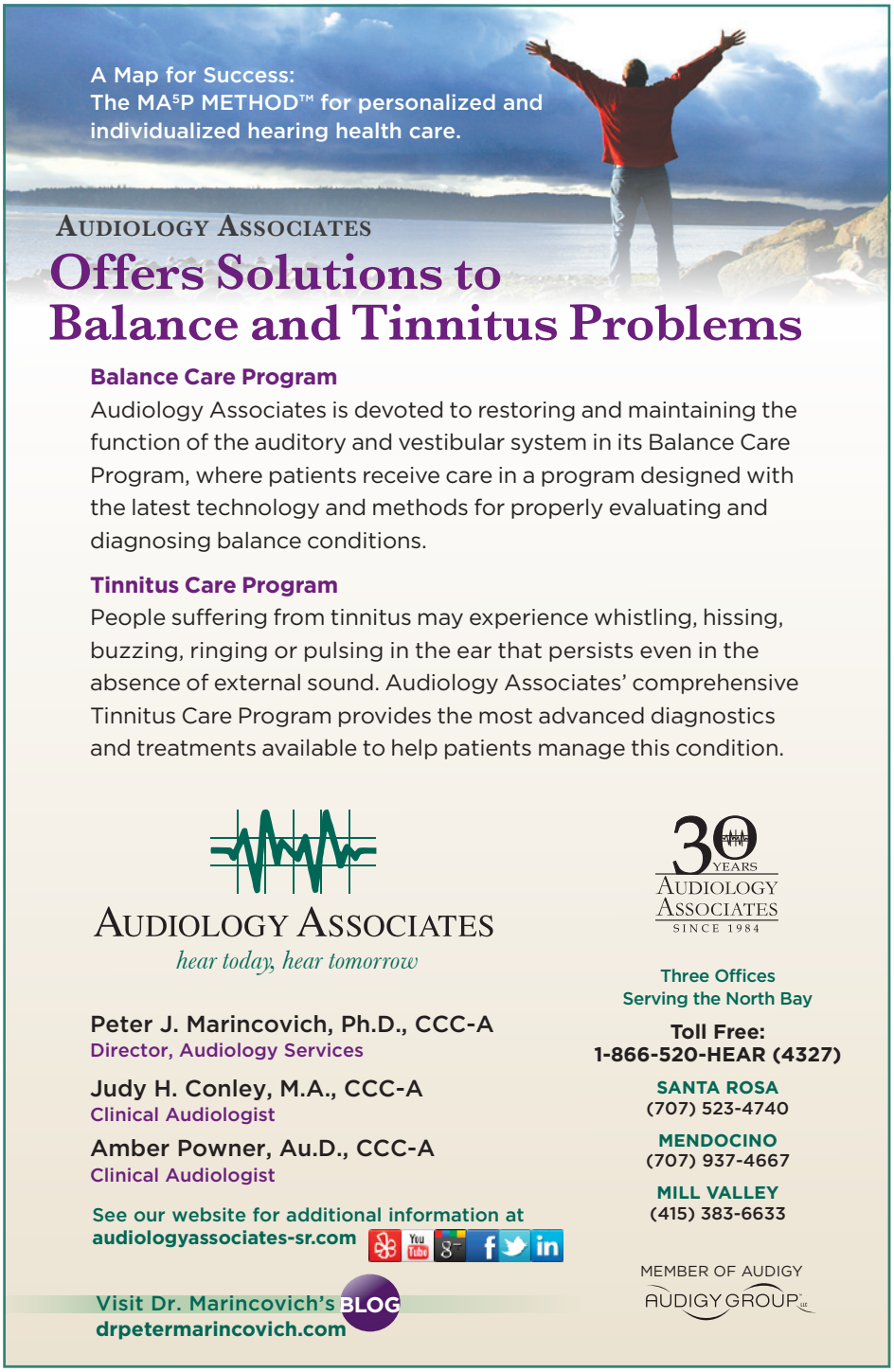
She started on a 1,200 calorie low-fat diet, avoiding refined carbohydrates (the whites: white sugar, white flour, white rice, and white potatoes because of all the toppings). I advised her to eat small, frequent servings of protein throughout the day. She also began phentermine at one-half of a 37.5 mg tab daily. She delayed pregnancy for several months during the active weight-loss phase. She resumed regular physical activity and started yoga. She was seen every 2–4 weeks for monitoring, and I adjusted her program as needed.

At her 6-month follow-up exam, she had lost 12 pounds, her menses had returned to normal, and she was feeling better than she had in a long time. Her husband also lost 25 pounds. (When women take better care of themselves, it is common for the entire family to benefit.) Medications were stopped, and she continued to lose weight following a program of reduced calories, optimal protein, regular physical activity, and yoga for stress management. Six months later she happily reported she was eight weeks pregnant. After five months of pregnancy, she was 10 pounds lighter than at her initial visit.

This case illustrates the tremendous opportunity physicians have to influence weight loss in women before and during pregnancy. The U.S. Preventive Services Task Force recommends making height and weight measurements part of vital signs.[7] They also recommend recording waist circumference for people with a BMI over 25. These actions go a long way toward letting patients know the importance of weight loss; they also alert you to potential risks. Patients are often surprised to learn what weights are medically considered overweight, obese and extremely obese.

Beginning weight counseling early, long before pregnancy is contemplated, makes a big difference. It's easier to lose 10 to 30 pounds when a patient is younger, and changes made at this time of life can have a positive effect far into the future. Eating more protein, much less sugar and avoiding refined carbohydrates can result in significant weight loss. Even weight loss of 5–10 pounds can improve health and metabolic parameters.

Anti-obesity medications can be a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helpful tool when used with a comprehensive program. Patients who have a significant amount of weight to lose often do better with medications. All weight-loss medications are contraindicated during pregnancy, but they can offer a significant advantage when used selectively and carefully monitored with patients who are considering a pregnancy that might otherwise be impossible.

Several weight-loss medications have recently been approved by the FDA, making it easier for primary care physicians and ob-gyns to prescribe them. The medications include phentermine-topiramate (Qsymia), lorcaserin (Belviq), wellbutrin-naltrexone (Contrave) and liraglutide (Victoza). Each offers a different approach to a complex problem. Some older medications, such as phentermine, diethylpropion and phendimetrazine, have a long history of safety and effectiveness. Patients must use appropriate contraception during this active weight-loss phase.

For pregnancy itself, clomiphene has long been considered first-line therapy to induce ovulation. Metformin plays a role in managing infertility caused by polycystic ovary syndrome (PCOS), an endocrine abnormality that, through numerous proposed mechanisms, leads to anovulation.[8] Although the comparative results of clomiphene vs. metformin have differed, a 2009 meta-analysis showed no difference between the two treatments in terms of ovulation rate, pregnancy rate, or live birth rate.[9] When clomiphene plus metformin was compared with monotherapy with each agent, combination therapy was no more successful than monotherapy.

Patients who are candidates for metformin therapy must be made aware that it induces ovulation indirectly, taking up to six months to improve ovulation.[9] Clomiphene, in contrast, acts directly by producing a surge of luteinizing hormone and could cause ovulation within days.[9]

Bariatric surgery may not typically be considered when discussing planning pregnancy, but in the severely obese woman, bariatric surgery can greatly improve her odds of conceiving, either naturally or assisted. A positive outcome of pregnancy is also directly linked to the degree of weight loss.

A small cohort study reported at the 2011 meeting of the American Society for Metabolic and Bariatric Surgery showed that PCOS symptoms improved significantly after bariatric surgery, and previously infertile women successfully conceived. Almost all the patients had resolution of menstrual dysfunction, and fewer reported hirsutism. Every infertile woman in the study who wanted to conceive did so postoperatively, either naturally or by assisted reproduction. On the other hand, a 2009 practice bulletin from ACOG concluded that, "Bariatric surgery should not be considered a treatment for infertility."

For women who have been unable to become pregnant, weight loss can be all that's needed. The closer these women get to their ideal weight, the better their chance of success. There are many reasons for infertility, however, and weight loss and lifestyle changes will not address all of them. Nonetheless, weight loss is one of the most powerful and effective interventions. In my experience, just reducing insulin resistance with proper diet and physical activity can make the difference.

Weight loss can help restore a healthy hormonal balance in both overweight and obese men and women. It can create an environment where the odds of becoming pregnant naturally, as well as the success of infertility treatments, are optimized.

Here are some suggestions for making weight management part of a busy practice:

Ask permission to discuss weight. A few nonjudgmental questions can initiate a powerful partnership. "Would it be alright if we discussed your weight?" or "I'm concerned about your weight because I think it might cause health (or pregnancy) problems down the line" are a good place to start. Preferred words and phrases, such as *unhealthy weight*

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or *excess weight,* are better accepted by patients than words and phrases like *obese, fat* or *large size.*

Make your office welcoming to overweight patients. Use scales that read higher weights, large-size gowns, and chairs that are comfortable and fitting. Respect their privacy and remain sensitive to how you speak about their weight as it impacts their health. Make weight, BMI and waist circumference part of routine vital signs as appropriate.

Begin counseling early. Begin educating and counseling on the benefits of achieving and maintaining a healthy weight long before pregnancy is desired.

Provide monthly follow-up. Patients who are actively in a weight-loss phase need regular follow-up during maintenance.

Refer if necessary. Patients with complex weight-loss needs may need referral to a specialist.

When seeing an overweight or obese woman choosing to become pregnant, offer counseling and recommendations for appropriate calorie and nutritional intake, plus physical activity. Handouts work well at this stage. Patients who are in an active weight-loss process should be seen every 2–4 weeks for support and guidance. Often these visits can be done by a nurse or medical assistant; minimal extra training is required.

If these efforts are unsuccessful or the patient has significant weight to lose, refer them to a dietitian, community weight-loss program or specialist. In my experience, a physician's interest in a patient's weight loss frequently results in a positive response. ◇

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The Smoke-Free Babies Program

Jennifer McClendon, MPH

Case Study

Jennifer, a mother of two children aged 7 and 9, is 37 weeks pregnant when she arrives at the Center for Well-Being on a crisp February morning to meet individually with the Center's Smoke-Free Babies coordinator. Today is Jennifer's fourth visit since beginning the program in early January. Within two months of receiving Smoke-Free Babies support services, Jennifer has reduced smoking from an average of two packs a day (40 cigarettes) to her current average of four cigarettes a day.

For Jennifer, quitting has always been a struggle. She began smoking in the fourth grade, really picked up the habit in seventh grade, and has been smoking ever since. Jennifer's mom was a smoker during her pregnancies with both Jennifer and her brother, and she still is a smoker. While Jennifer was growing up, everyone in her family smoked, so access to cigarettes was unlimited. Throughout her smoking history, Jennifer has tried numerous methods of quitting. One of those methods, a combination of pills and support materials, only resulted in making her sick. Jennifer's husband also smokes, although he is able to reduce his smoking far more easily than she can.

Nothing seemed to work, and Jennifer continued to smoke during her first two pregnancies. Her daughter was born just under five pounds and one month pre-term, and her son was five pounds, one ounce, and three days pre-term. Jennifer's current pregnancy was unplanned, as she was on birth control, and she didn't find out she was pregnant until six and a half months into the pregnancy. When Jennifer's ob-gyn at a community clinic referred her to the Smoke-Free Babies program, she was motivated to try quitting again. This time she will have the support, help and understanding she needs to quit naturally without nicotine replacement treatment.

Ms. McClendon is manager of business development and strategy at the Center for Well-Being in Santa Rosa.

What is Smoke-Free Babies?

Smoke-Free Babies (SFB) is a program of the Center for Well-Being that provides smoking cessation services throughout Sonoma County. It is funded by First 5 Sonoma County and the Sonoma County Department of Health Services. SFB is modeled on the Great Start quit-smoking program for pregnant women, a best practice shown to have success in helping women quit or reduce smoking.

Pregnant women and new moms with kids aged 0 to 5, as well as their spouses or partners, are eligible to receive free SFB services in English or Spanish. There are no upper income limits, nor does it matter if a client is uninsured or underinsured. Most SFB clients are 22 to 40 years old, and the vast majority are low-income Caucasian women who are referred to the program by their primary care doctor or ob-gyn. Clients are an even mix of new moms and moms with young children. The program does not limit the number of visits or support calls, usually providing 4–6 sessions per client. There is always the option for a "do-over" if the client regresses to smoking or does not experience success. The SFB coordinator also hosts educational group presentations to women in perinatal drug and alcohol recovery programs.

Women come to SFB primarily to quit smoking for the health of their baby and to have better birth outcomes. Similar to Jennifer's story, clients are motivated to quit after learning they are pregnant because they often were already thinking of or had tried unsuccessfully to quit. That's where the Smoke-Free Baby coordinator's expertise is vital.

Behavioral Change

Making a personal behavioral change is difficult. If patients aren't ready for change or need greater support than time allows in a regular doctor's visit, influencing them to change is far more difficult, even when the health implications of a habit like smoking are well documented. Yet pregnant mothers have to make a rapid change for the health of their unborn child. How does a patient with a learned coping response of lighting up a cigarette to handle life's challenges reduce or quit smoking? The answer at Smoke-Free Babies is to help women accomplish sustainable behavioral change by guiding them through the five stages of change.

Pre-contemplation Stage

The success of Michelle McGarry, the Center's SFB program coordinator, can be attributed to her ability to meet each

client where they are in the process of creating behavioral change, supporting women as they move from pre-contemplation to action. As a former smoker, she has a unique understanding of the emotional connection to smoking, and that earns her client's trust.

Once a new client is referred to SFB and accepts services, Michelle identifies her level of motivation by conducting an initial interview. Questions gauge ambivalence and motivation and identify individual triggers for her smoking. Common triggers include drinking coffee in the morning, resting after meals, dealing with stressful situations, and driving.

If a client is pre-contemplative, or isn't ready to quit or reduce, the initial goal is to motivate her to consider making a change. This process begins with a client-centered counseling approach where open-ended questions allow the client to express her feelings about tobacco addiction and then hear them summarized back. Questions include "How do you feel about your smoking?" and "What caused your thinking about quitting prior to finding out you were pregnant?" The client's answers lead to questions that probe deeper. During the conversation, the client's perception might shift to acknowledge her interest in considering quitting or reducing smoking.

Contemplation Stage

Once a client begins contemplating quitting or reducing smoking, Michelle suggests a few changes to practice for two weeks until her next visit. An example is to suggest that a client wait five minutes before lighting a cigarette and write down in a journal how she is feeling. The changes highlight the gradual process of quitting and build the client's confidence that she can make a behavioral change. "Many women have started smoking early and have developed emotional attachments around their smoking habits and rituals that keep them bound to this way of coping," says Michelle. "In the process of working with clients, I begin to shed light that really it's the emotion that

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"Physicians get busy and don't realize how valuable it is to be united.
Being organized gives us the power to deliver high-quality health care and practice medicine in an environment that's good for us *and* for our patients."
JEFF SUGARMAN, MD
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SCMA Past President
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COMPLETE LIST of MEMBER BENEFITS page 44

Why **SPECIALISTS** *should be SCMA/CMA members:*

1. By speaking as a united voice, physicians exert a **powerful influence** on the political process at the local, state and national levels. Organized medicine is the "one voice" that legislators and government hear.
2. CMA/SCMA worked diligently to **protect MICRA** (Medical Injury Compensation Reform Act), leading a successful campaign defeating Prop. 46 in the 2014 election.
3. **CMA faces down a slew of legal challenges** to the practice of medicine throughout the year, with issues including scope of practice, Medicare audits, peer review and medical staff self-governance.
4. "10 million reasons to be a CMA member." CMA's reimbursement experts have **recouped $10 million** from payors on behalf of physician members over the past five years!
5. SCMA is involved in several **initiatives to improve community health** in Sonoma County, including access for the uninsured, anti-tobacco, oral health, end-of-life issues, reducing cardiovascular risk, safe prescribing of opiates, and much more.

causes the stress. If a woman is able to deal with emotions head on, through reframing the issue or problem solving, she can begin to make a change."

Preparation and Action Stages

As soon as a client recognizes the link between a specific emotion and lighting up, she is ready to practice other strategies to confront emotions instead of smoking. Together with Michelle, each client identifies a list of strategies to replace smoking that might include calling a friend to share what's going on, reaching out to the SFB coordinator, journaling, going outside for a walk, and other distraction techniques such as knitting or playing computer games.

Strategies are individual to each client, but the purpose is the same: do anything to try to break the cycle of smoking as a coping strategy. For example, when Jennifer is asked about her coping strategies during her fourth appointment, she raises her newly manicured hands with a smile to show off her painted fingernails. This distraction technique appears to be working as Jennifer continues to reduce her daily cigarette intake.

Michelle usually meets every two weeks with her clients, following up on any changes they've made in their smoking routine. Successes that are celebrated include delaying their first cigarette in the morning, cutting down on the total number smoked each day, and using a tool or distraction to minimize or reduce their smoking.

Maintenance Stage

The SFB approach to behavioral change is working for Jennifer, and her ob-gyn is thrilled with her progress in reducing her smoking. Jennifer is confident that she'll soon be able to go entirely smoke-free and stay smoke-free after the baby is born.

Since the SFB program started in 2010, more than 400 women and children have benefited from SFB counseling, and 90% of the women reduced their tobacco consumption. During follow-up evaluations 3–6 months after completing the program, 97% of the women report not smoking in their homes or their cars, reducing the risk of secondhand smoke for their newborn or young child.

When asked if she would refer other pregnant women to SFB, Jennifer says yes: "It is easier to come here and talk to someone who's already been through it than to talk to a machine or talk with people who have never smoked that just judge you. [Michelle] tells me I'm doing good and everything is going to be OK." As Jennifer's third child comes into the world, Michelle will continue to support her as she goes entirely smoke-free.

Smoking in Sonoma County

Nearly 14% percent of Sonoma County pregnant women reported smoking during their first or third trimester, far higher than the state's average of 8.3%. This rate is significant for the health of the baby because the amount of blood and oxygen flowing from a smoking mother to her unborn child is reduced compared to that of a non-smoking mother, increasing the likelihood of miscarriage, premature birth and/or having a baby with low birth weight. According to the California Department of Public Health, nearly 6% of all Sonoma County babies are born with a low birth weight. Smoking during and after pregnancy is also a risk factor for sudden infant death syndrome (SIDS).

The Center for Well-Being partners with Sonoma County physicians, community clinics, hospitals, drug rehabilitation centers, transitional housing and various social service agencies to reduce the rate of adverse health outcomes correlated to smoking during pregnancy. Eligible patients are referred to the Center's SFB program. If the SFB coordinator is unable to reach the client or she refuses services, the referring physician is informed of the situation. If a patient is seen by the coordinator, she is urged to share successes with her physician throughout the SFB treatment.

About the Center for Well-Being

The Center for Well-Being (www.norcalwellbeing.org) is a nonprofit health education and wellness center committed to combating chronic disease. The Center has offered evidence-based group education and chronic disease prevention activities, along with innovative community empowerment programs, for more than 18 years. In addition to the Smoke-Free Babies program, the Center hosts comprehensive tobacco-cessation classes.

To learn more about the Smoke-Free Babies program or other services offered by the Center, contact us at 707-575-6043 or email Michelle at mmcgarry@nccwb.org. ◇

Email: jmcclendon@nccwb.org

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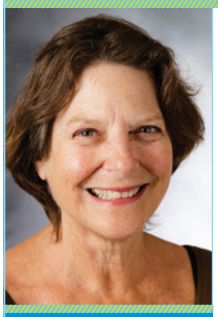

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Is Sublingual Buprenorphine a Better Opioid?

Andrea Rubinstein, MD

After nearly a generation of liberal opioid prescribing, the pendulum is beginning to swing back towards more conservative prescribing patterns. The question now is what to do with the thousands of patients on chronic daily opioid use. Tapering off is a good option for some, and maintaining their current regimen may be a good option for others. For a significant number of patients, however, neither option is optimal. For these patients, sublingual buprenorphine for pain may be a good choice.

Within the Department of Chronic Pain at Kaiser Santa Rosa, we have been using buprenorphine in carefully selected patients for more than seven years. We have considerable experience in starting, maintaining and tapering patients off this medication. Sadly, there is not much in the literature on using sublingual buprenorphine for pain. What I present here is a brief review of buprenorphine, combined with our experience in using it successfully in many patients.

Buprenorphine is an opioid with unique characteristics that give it a high safety profile along with a low risk of abuse, fewer side effects than other opioids, and potent and stable analgesia. Exploiting some of the properties that make this drug unique may allow for reduced risk and better analgesia for patients requiring opioid therapy for chronic pain.

Dr. Rubinstein, an anesthesiologist, is chief of the chronic pain department at Kaiser Santa Rosa.

A growing number of physicians use buprenorphine for a variety of pain syndromes where opioids are necessary. Anecdotally, those of us who prescribe it are starting to believe that buprenorphine for some patients is indeed a better opioid option.

History and Features

Buprenorphine is not new. It was formulated in the late 1960s and launched in Europe as an analgesic under the brand name Temgesic in 1970. Since that time, it has been used as an analgesic, primarily in Europe. It is effective as an analgesic when used intravenously, epidurally, intrathecally, in peripheral nerve blocks, and most recently in the U.S., transdermally.[1]

In 2003, sublingual buprenorphine was launched in the U.S. for office-based treatment of opioid addiction as an alternative to methadone maintenance. It is classified as a CIII medication. In 2009 it became generic in the U.S. At this time there is no FDA approval for sublingual buprenorphine for pain, although the new transdermal formulation is FDA-approved for pain.

Make no mistake, buprenorphine is an opioid and a potent analgesic. It is highly lipophilic and has low oral bioavailability. It has been described as a partial agonist at the mu receptor but it has action at multiple other receptors including kappa (antagonist), delta (antagonist), and a partial agonist at the opioid receptor-like ORL-1 receptor. As a result of these more complex receptor interactions, buprenorphine behaves somewhat differently than other opioids in a number of interesting ways.

Analgesia

Being an opioid, buprenorphine is a potent analgesic with an analgesic half-life of 6–8 hours but protection against withdrawal for more than 24 hours. It has a potency 7–10 times that of oral morphine.[2,3] Several studies have shown efficacy equal to or superior than morphine.[4,5] There is a general misconception that buprenorphine has a ceiling effect for analgesia.[2] This is based on early animal studies, but a ceiling effect for analgesia from buprenorphine at clinical doses has not been shown.[6–8]

In addition to being a good analgesic, buprenorphine may also be anti-hyperalgesic.[9,10] Hyperalgesia is often seen with people on opioids, particularly as the dose increases. In patients with hyperalgesia, pain gets paradoxically worse as the dose goes up. Function declines, and pain often becomes generalized over multiple body parts.

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When placed on buprenorphine, patients with diagnosed hyperalgesia often require doses far lower than their previous opioid dose would predict. One explanation is that buprenorphine reverses hyperalgesia with even low doses.

Respiratory Depression

By far the most serious side effect of opioid use is death from respiratory depression. As opioid prescribing has liberalized, the rates of death have increased dramatically. According to the Centers for Disease Control, for inpatients aged 25–64, death from opioid overdose now outstrips death from motor vehicle accidents.

In contrast to other opioids, buprenorphine has a ceiling effect for respiratory depression in most—albeit not all—situations. Respiratory rate goes down with buprenorphine, but only modestly; and as doses go up, no additional respiratory depression occurs. This feature gives buprenorphine a large safety advantage over other opioids. That may be reason enough to consider buprenorphine as a front-line drug among patients who need chronic opioid therapy.

Endocrine Suppression

Endocrine suppression, particularly of testosterone, is a common side effect of chronic opioid use. In a large study of 1,585 men on long-acting opioids, 57% were found to be androgen deficient (total testosterone <250 ng/dl). Buprenorphine is the only long-acting opioid that has been shown to have significantly lower rates of androgen deficiency.[11,12]

Reinforcing Effects

Buprenorphine does not seem to be as reinforcing as other opioids used to treat pain. There is a paucity of literature on this topic, but in our practice our clinical experience is that doses of buprenorphine go down over time, albeit slowly. Patients tend to fill less frequently because they say they "forget to take some does." Many use 30 days' worth of buprenorphine in 40 or even 60 days. In our experience, buprenorphine is the only opioid whose dose goes down over time when used chronically. Patients on sublingual buprenorphine for pain will self-regulate their dose after taking less on "good days" and more on "bad days."

Depression

Patients who use opioids chronically often experience an increase in depressive symptoms. Buprenorphine by contrast seems to possess potent anti-depressive qualities in some patients.[13–15] A current clinical trial is examining buprenorphine plus venlafaxine for refractory treatment of resistant depression. Our clinical experience is that about one-third of patients placed on sublingual buprenorphine experience significantly reduced depressive symptoms.

Clinical Obstacles

Buprenorphine is an opioid that is potent for pain; has a ceiling effect for respiratory depression but not for analgesia at clinical doses; and is minimally reinforcing, with doses tending to go down over time. It also has fewer endocrine effects, may reverse hyperalgesia and may reduce depression. So why are so many physicians resistant to using this medication?

Some physicians may believe that you need a special license to prescribe buprenorphine. That is true only if you are prescribing it on-label for opioid substitution as part of a treatment for chemical dependency. If you prescribe it off-label for pain, there is no need for a special license.

Others may believe that buprenorphine is a partial agonist and therefore somehow is not analgesic or not a good analgesic. Buprenorphine in fact is a potent analgesic, and a ceiling effect for analgesia at clinically relevant doses has never been shown in humans. Patients have been successfully transitioned to buprenorphine for pain from doses greater than 1000 mg morphine.[4]

Finally, there is concern that buprenorphine cannot be used with

other opioids because it blocks them. Buprenorphine does have high affinity for the mu receptor and the belief has been that it binds to the mu receptor and outcompetes other opioids. Interestingly, in one assay buprenorphine had a lower binding affinity than the opioid sufentanil and one just slightly higher than hydromorphone.[16] In one meta-analysis, buprenorphine behaves more like a full agonist in in-vivo studies, but like a partial agonist in in-vitro studies.[17]

Buprenorphine has been successfully used perioperatively and in conjunction with other opioids in several studies without issue. We routinely maintain patients on buprenorphine throughout the perioperative period, making sure they take their dose the morning of surgery and then continuing perioperatively. They can have their post-operative pain treated by use of other opioids without issue in most cases.

Nothing Is Perfect

Despite all the advantages of buprenorphine, there are a few cautions. Sublingual buprenorphine is not for opioid-naïve people. In patients on less than 25 mg morphine equivalent per day, there is no way to get a buprenorphine dose low enough to match their dose; and doses higher than required tend to cause nausea. Transitioning to buprenorphine can be tricky and does require a period of withdrawal from the previous opioid. The respiratory depression safety profile for buprenorphine may be eliminated if it is used with other central nervous system depressants.

For some patients, opioids may be a necessary part of their regimen to control pain. If there was an opioid that was potent for pain, had lower abuse potential, less respiratory depression, fewer endocrine side effects, stable dosing over time, and left patients feeling clear-headed instead of fuzzy, wouldn't you want to consider it? ◇

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MYSTERY CASE SOLVED

Dr. Andrew Wagner, a Sebastopol hospice and palliative medicine physician, has solved the "mystery case" presented by Dr. Allan Bernstein in the Winter 2015 issue of *Sonoma Medicine.* In the case, a 90-year-old patient presents with an acute onset of episodic right-sided noises, unsteadiness and ear fullness. The correct diagnosis is seizure phenomena.

"I would recommend an EEG," wrote Dr. Wagner. "Suspect seizure phenomena; focal epilepsy without loss of consciousness; mesial temporal or neocortical."

In explaining the diagnosis, Dr. Bernstein notes, "Partial simple seizures may present with stereotypic symptoms, often in a crescendo pattern with no loss of consciousness and no focal finding during or between events. The imaging is typically negative as would be an EEG, which was not obtained during the acute phase of the illness. New onset seizures occur in the young and the old, with very few occurring in the middle years except from trauma, tumors, infections and drugs. The pattern of seizures in the elderly is typically focal, often thought to be related to degenerative conditions or microvascular disease. Many medications will induce seizures in the elderly but not in younger populations.

"This individual was started on a very low dose of valproate, which completely resolved the symptoms in less than a week. With minor adjustment in the dosing, symptoms have not returned in 3 years. When the patient attempted to stop the medication, all symptoms reoccurred within a week. It was restarted."

"Mystery Case" will resume in the Summer 2015 issue. ●

Bridging the Linguistic Gap

Jimmy Wu, MD, MPH

As patient MM and his wife drive to his optometry appointment on a lazy Wednesday afternoon, little does he know that he will return home a scarred and humiliated man.

Fortunately, the Chinese-speaking 65-year-old has engaged in a healthy lifestyle, and his medical records are quite impressively slim. His interactions with medical providers have been fairly minimal. Today, however, he is traveling to his doctor's office for a vision check—a medical assessment that should be fairly routine for a man his age.

MM and his wife first check in at the front desk. While the receptionist does not speak his language, MM has gone to the doctor's office enough to know that showing his ID and insurance card will suffice. He and his wife are called after about 10 minutes, and the optometrist starts taking them to her exam room. What happens next will dramatically alter the rest of MM's day.

According to a recent Census Bureau report, more than 25 million Americans (about 10%) speak English "less than very well," and more than 60 million (about 20%) speak a language other than English at home. In California, nearly one in five people is considered to be LEP (limited English proficiency)![1]

The relative consensus is that linguistic gaps are a major contributor to health disparities and poor health-related outcomes. There are, for example, more medication complications, longer hospitalizations, decreased patient satisfaction, poor adherence to treatment and followup, and inappropriate diagnosis.[2] In addition, LEP patients have lower rates of physician visits and preventive services, and decreased comprehension of their diagnoses and treatment.[3] The Latino LEP population consistently experiences decreased access to care and decreased quality of care.[4]

Dr. Wu is a family physician at the Vista Family Health Center in Santa Rosa.

Fortunately, there is a solution to these problems: trained medical interpreters. Studies have shown repeatedly that the presence of a trained interpreter improves health outcomes for the LEP population.[5] Patients with interpreters have better overall information recall, increased satisfaction, make more outpatient visits, obtain more preventive screening and enjoy better diabetes-related outcomes.[5]

While there has not been a formal direct cost-benefit analysis of interpreter services, a 2002 Office of Management and Budget report estimated that it would cost $270 million per year to provide interpreter services in the most commonly used medical settings.[6] The exact savings have never been calculated, but one can extrapolate that by increasing primary care visits, accessing more preventive services and decreasing the linguistically-related health disparities, the potential savings are tremendous and greatly outweigh the cost.

As MM enters the exam room, he exchanges basic pleasantries with the optometrist in his limited English. As soon as the questions and answers start, however, something goes horribly wrong. The optometrist is raising her voice and using words he doesn't understand. "Do you not speak English? I cannot conduct this visit if you do not speak English or at least bring somebody with you who does speak English!"

MM asks his wife, "Yi sheng wei she mo dui wo men shen qi?" He simply cannot understand why the optometrist is so upset with him—he doesn't think he has said anything offensive. The incomprehensible words continue to fill the air. "I just do not have time in my day to deal with this! We need to reschedule your visit, and you need to bring somebody who speaks English!"

MM understands enough to determine that the optometrist is annoyed, probably because he does not speak her language. In his broken English, he tries to convey the idea that there is a Mandarin-speaking nurse in the clinic who can help. The optometrist quickly rejects this attempt at a solution and continues to mutter on about how the visit needs to be rescheduled.

Once MM realizes that the current situation has deteriorated, he snaps to his wife, "Wo men zo ba! Wo bu xiang hui lai zhe ge zhen suo!" He feels disrespected and quickly leaves the exam room while fuming in Mandarin. He somehow communicates a desire to speak with the manager, and now with the help of the aforementioned nurse, a temporary solution is proposed. He will return to see a different optometrist the next day.

The above scenario is fictitious, but it reflects what can happen when people with limited English proficiency try to access health care.

In 2000, President Clinton signed Executive Order 13166, "Improving Access to Services for Persons with Limited English Proficiency." The order

states that organizations receiving federal funds "must take reasonable steps to ensure meaningful access to their programs and activities by LEP persons."[7] California is one of six states that have also mandated that some form of cultural and linguistic competency be present within their health care workforce.[8]

Table 1 shows four of the 14 Culturally and Linguistically Appropriate Services (CLAS) standards. These standards were first created by the Office of Minority Health in 2000 and have undergone several revisions with the goal of helping organizations implement more culturally and linguistically appropriate services for their patients.

The four CLAS standards shown in Table 1 are considered federal mandates for all organizations receiving federal funding.[8] Table 2 shows key questions to answer when assessing your organization's CLAS readiness.

MM leaves the clinic completely disillusioned and in disbelief from the interaction that just transpired. However, he and his wife still decide to give the clinic a second chance and return the next day.

He soon meets with the second optometrist. He also does not speak Mandarin, but he seems friendlier and more willing to help. MM had hoped that the Mandarin-speaking nurse at the clinic would be present this time, but she isn't. Nevertheless, he is not immediately kicked out by the optometrist, so he decides to continue. The optometrist proceeds by turning his computer towards MM and begins using Google Translate. This still seems somewhat awkward to MM, but he feels it's better than nothing. There are a few funny moments, such as the Google translation of "glasses" to "buo li "(as in "glass window") instead of "yan jing" (as in "eye glasses"), but the visit proceeds without much incident.

The above scenario demonstrates a number of culturally and linguistically inappropriate behaviors and actions; one could postulate that MM's experience negatively impacted his health in several ways. It left him quite disenchanted with the clinic and the health care system, and it would not be a surprise if the experience discourages him from further seeking care at the clinic. More immediately, it was an emotionally upsetting experience.

Unfortunately, scenarios like this happen all the time, in both private and federally funded health care organizations. One of the more tragic cases involved a misunderstanding of the Spanish word *intoxicado.* The medical provider thought the word meant "intoxicated," but it really means "feeling sick to the stomach." This misinterpretation prompted an evaluation for drugs of abuse. Meanwhile, the correct diagnosis of an intracerebral hemorrhage was delayed, and an opportunity to prevent the eventual quadriplegia was missed. The patient was awarded $71 million in the subsequent malpractice suit.[9]

Table 1: Selected CLAS National Standards (4–7 of 14)

4. Health care organizations must offer and provide language assistance services, including bilingual staff and interpreter services, at no cost to each patient/consumer with limited English proficiency at all points of contact, in a timely manner, during all hours of operation.
5. Health care organizations must provide to patients/consumers in their preferred language both verbal offers and written notices informing them of their right to receive language assistance services.
6. Health care organizations must ensure the competence of language assistance provided to patients/consumers with limited English proficiency by interpreters and bilingual staff. Family and friends should not be used to provide interpretation services (except on request by the patient/consumer).
7. Health care organizations must make available easily understood patient-related materials and post signage in the languages of the commonly encountered groups represented in the service area.

With regard to risk of liability, a summary of the CLAS standards states, "[H]ealth professionals who lack cultural and linguistic competency can be found liable under tort principles in several areas. . . . If a provider proceeds with treatment or an intervention based on miscommunication due to poor quality language assistance, he/she and his/her organization may face increased civil liability exposure."[8]

Family members, friends and other untrained interpreters are considered ad hoc interpreters, as is the use of Google Translate in the hypothetical scenario above. Using such "interpreters" is considered to be a violation of CLAS Standard No. 6, and is fraught with pitfalls. Anecdotally, most medical offices in Sonoma County don't provide trained medical interpretation, thereby prompting the use and presence of ad hoc interpreters.

A recent study found that the proportion of errors of potential consequence was significantly lower for

Table 2: Assessing Your Organization's CLAS Readiness

1. Does our organization serve a population that includes patients with limited English proficiency (LEP)?
2. If yes to #1, what languages are represented?
3. Does our organization employ staff/providers who are bilingual in the above languages (question #2)?
4. Does our organization have on-staff trained medical interpreters?
5. If no to #4, does our organization have access to other trained medical interpreters (e.g., phone).
6. Does our organization have written notices informing patients of their right to receive language assistance services?
7. Does our organization have signage and patient-related materials in languages of commonly encountered linguistic groups?

professional versus ad hoc interpreters.[10] In fact, there was no significant difference in errors between the ad hoc group and the no-interpreter group. Using family members and friends is typically viewed as the "easy way out," and the evidence suggests that having untrained interpreters can result in many medical and communication errors. For example, "unfamiliarity with medical terminology, embarrassment about intimate or sexual abuse, unsolicited advice, and mixed motives or personal agendas" are potential problems when using ad hoc interpreters.[11] While common, using younger children as interpreters is an even bigger taboo when trying to offer linguistically appropriate services.[11]

Trained medical interpreters are an invaluable resource. While https://www.thinkculturalhealth.hhs.gov/ there is no national standard for certification, most undergo a rigorous 100+ hour training that provides them "a professional code of ethics that includes confidentiality, impartiality, accuracy and completeness."[11] The medical interpreter's job is to interpret the spoken word without additions, deletions or changes in meaning and without providing their own opinions. Interacting with trained medical interpreters (whether in person or via telephone) is the best way for medical staff to glean accurate meanings from the patient. Medical interpreter resources for physicians are listed in Table 3.[11]

Table 3: Medical Interpreter Resources for Physicians

- A Physician's Practical Guide to Culturally Competent Care: www.thinkculturalhealth.hhs.gov
- How to Communicate Effectively Through Interpreters: www.au.af.mil/au/awc/awcgate/army/using_interpreters.htm
- Cross Cultural Health Care Program: www.xculture.org
- DiversityRx: www.diversityrx.org

Telephone Interpreter Services

- Pacific Interpreters (covered by Partnership Health Plan for PHP patients): www.pacificinterpreters.com
- CyraCom Language Solutions: www.cyracom.com
- LanguageLine Solutions: www.languageline.com
- MultiLingual Solutions: www.mlsolutions.com
- Telelanguage: www.telelanguage.com

A key point in using trained medical interpreters, whether they are present in person or on the phone, is to speak directly to and with the patient. Rather than facing the intepreter and asking, "Has she been taking her blood pressure medication?" the clinician should speak directly with the patient. Say, "Have you been taking your blood pressure medication?" and allow the interpreter to do his or her job. They are trained to understand that clinicians will most likely not address them directly during the visit. See Table 4 for more recommendations on how to best use an interpreter.

When seeing patients with limited English proficiency, using trained interpreters to bridge the linguistic gap is the legally and ethically appropriate thing to do. Moreover, it is our obligation as physicians and healers to abide by one of many oaths we took: "I will not permit considerations of age, disease or disability, creed, ethnic origin, gender, nationality, political affiliation, race, sexual orientation, social standing or any other factor to intervene between my duty and my patient."[12] Patients with limited English proficiency are already a marginalized population. Our responsibility is to lessen that marginalization by using trained medical interpreters. ◇

Table 4: Tips for Using Medical Interpreters

- Speak directly to the patient. Use first-person statements and avoid saying "Tell him/her . . ."
- Do not use idioms, acronyms or jargon.
- Insist on sentence-by-sentence interpretation to avoid tangential conversations.
- Allow for extra time.
- Speak in short sentences or short thought groups.
- Ask only one question at a time.
- Allow appropriate time for the interpreter to finish the statement.

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Reflection

Eki Abrams, MD

As I entered the exam room to meet my new patient, I initially thought of the orange-haired heroine in the animated kid movie, *Brave*. Although the middle-aged woman's hair was not quite as orange as the heroine's, it was long, expansive in breadth and wavy in texture. Her hair seemed to engulf her petite frame. As I looked at her more closely, she appeared rather slim. Her layering of clothing disguised her build, but I could see that her cheekbones were prominent and the delicate skin between her collar bones had a sunken look. She was accompanied by another woman, her best friend of 45 years, and both greeted me with a friendly acknowledgement of my tall stature.

Shortly thereafter, the patient's friend requested medical refills, and a pink hospital plastic basin stocked with a multitude of pill bottles materialized. The friend gently thrust this toward me after the patient nervously conveyed a bewilderingly circuitous medical history, all while daintily perched on top of the exam table. When she revealed that she had been diagnosed several months ago with pancreatic cancer, her case made sense to me. The slight bitemporal wasting and waif-like frame confirmed that this malignancy was depriving her body of the nutrients she needed to survive. She delicately lifted her summery linen pink shirt to reveal a bag that was draining a lemon-curd colored fluid.

Dr. Abrams is a Santa Rosa internist with the Annadel Medical Group.

As my hands hovered over the keyboard while I tried to decide between laboriously typing the details of her diagnosis, failed alternative treatments and her current treatment plan, my eyes began to tear. I begged myself to pull it together and "stay strong," but I was transported right back to the oncology appointments I accompanied my mother to. Just a few hours earlier on my commute to work, I had felt my mother's presence as I heard Schubert's Piano Impromptu No. 3 on the radio, for it reminded me of the compositions she would play. In retrospect, I think my mother's spiritual presence that morning was intended to help prepare me for today's encounter.

I looked at my new patient. Mortified, I felt the burning tears rolling down my cheeks. Her nervousness instantaneously evaporated, and her tone and facial expression immediately conveyed such concern and empathy that for a moment I felt as if our roles had reversed and I was the one in need of healing. She tenderly asked who I had known that suffered from cancer. I shared with her that it was my mother, and I expressed the sense of inner discordance of remaining shielded and professional versus being vulnerable and wanting to connect.

A part of me wanted to remove the symbolic white coat and share with her that I could empathize with what she was experiencing. With outstretched arms, she enveloped me in a warm hug, and her friend, who was sitting close by, tearfully called out "group hug"! We hugged for what seemed like forever. Despite feeling the physical frailty of her exterior in my arms, I detected the internal strength that radiated from her core, magnifying her to a level of elevated dignity, beauty and strength.

For a moment it seemed surreal—how could this marvelous person contain within her such a beastly dysfunction? After we disengaged from our embrace, she and I held hands throughout the rest of the hour. She shared with me what it was like living with her good friend who through continued support was an inspirational pillar of love. She talked about how she worried about her youngest son being alone and her becoming a burden to the loving friends who were helping to take care of her. Unbelievably, in the midst of all this, her precious time had been consumed trying to find new doctors because of health insurance issues, and thus she was seeking me as her new primary care physician.

As an internist whose focus is mostly on preventive medicine, the paradigm shifted within me to be the best physician I could be for her in this phase of her life, which would most likely soon entail hospice care. She had recently attended a consult appointment at a large academic tertiary care facility, and the oncologist never took the time to look into her eyes. This was clearly a disheartening experience for her, so today she said she was just so joyous and appreciative of the connection we had made and would continue to nurture.

I thanked her. I thanked her for helping to heal a part of me that is continually grieving, and for helping me reaffirm why I chose to become a doctor. Doctoring is not so much "practicing medicine," the term I equated in my

pre-med days to being a physician, as it is being a healing person. The difference is subtle, but after four years in practice, I feel the internal shift between doing and being. The latter resonates within me and is the reason I chose primary care, a specialty that allows for creating and maintaining such intimate healing moments.

I never did see this lovely woman again. I soon received word that she had lost her battle to cancer. I shall never forget her spirit. ◇

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Ryan Bradley, MD, Anesthesiology, Santa Rosa, UC San Francisco 2004

Stanley Cheng, 1st-year medical student, Touro Univ

Enrique Gonzalez-Mendez, MD, Family Medicine*, Santa Rosa, National Autonomous Univ Mexico 1972

Shazah Khawaja, MD, Obstetrics & Gynecology*, Santa Rosa, Ross Univ 1999

Courtney King, MD, Internal Medicine*, Santa Rosa, Med Coll Georgia

Maria Petrick, MD, Allergy & Immunology*, Santa Rosa, Univ Tennessee 1998

Aynna Yee Sae, MD, Internal Medicine*, Santa Rosa, Meharry Med Coll 2000

Reza Sepehrdad, MD, Cardiovascular Disease*, Interventional Cardiology*, Santa Rosa, New York Med Coll 2006

Shalini Yalamanchi, MD, Ophthalmology, Santa Rosa, George Washington Univ 2004

Kristen Yee, MD, Plastic Surgery, *Craniofacial Surgery*, Santa Rosa, Johns Hopkins Univ 2003

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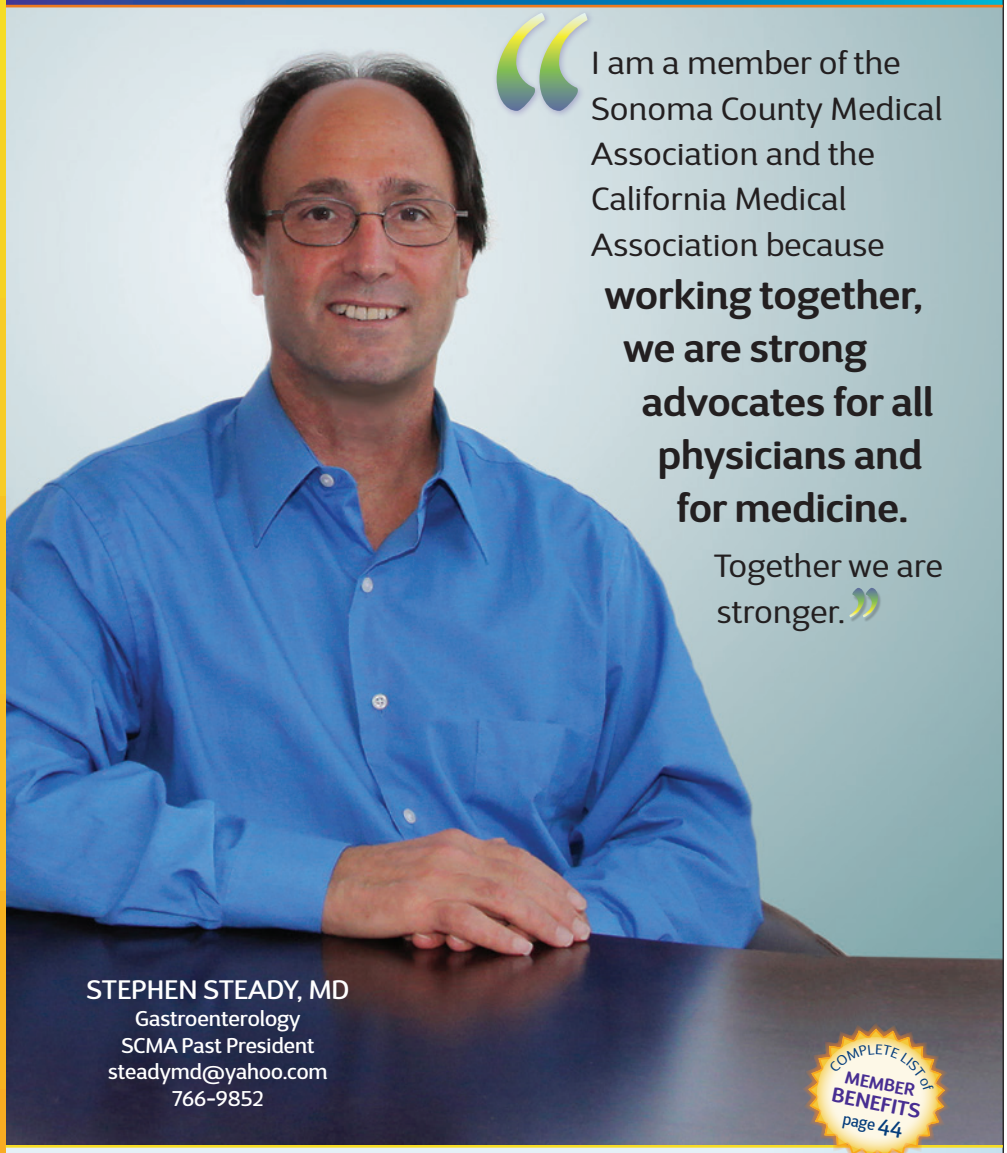
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The New Medicine

Rick Flinders, MD

Note: *Dr. Flinders made the following report to the SCMA Board of Directors in December 2014.*

It feels to me that the sea change we've been expecting in medicine for the past 25 years has finally happened. It isn't one thing. Perhaps the electronic health record, if there is a sentinel marker, has had the most visible (and palpable) impact. But like most change, what we're experiencing is a convergence of multiple, incremental factors that have qualitatively transformed the way we practice and teach medicine. The work of monitoring the regulation of our work seems to exceed the work. What I hear from many (not all) of my colleagues is that they are working more, but enjoying it less.

Dr. Flinders, who teaches hospital medicine at the Santa Rosa Family Medicine Residency, serves on the SCMA Board of Directors, and submits an annual report at the end of each year.

Interestingly, the average work hours of physicians (and faculty), compared to 20 years ago, are slightly fewer. What has changed, however, is our experience of work. The hours aren't longer; they just seem that way.

We didn't become doctors for fun. Most of us seek the satisfactions found in human service, meaningful work, personal engagement and a job well done. We don't expect our work to be easy, but we do expect our efforts to have value, beyond ours or someone else's monetary gain. It's often hard, sometimes fun and, if we're lucky, even joyful. Yet most current indicators show that job satisfaction among physicians has never been lower. Why?

I believe what we miss most in the new medicine is our patients. Our "face time" with them is substantially diminished. And the precious time we do spend with them is now shared with an uninvited guest: the ubiquitous electronic health record. Keyboard, screen, menus, prompts and embedded messages for management and coding now compete with the patient for our attention. Some physicians navigate this obstacle course more skillfully than others. But as long as our attention is divided, we're not fully there. And our patients are the first to notice.

My concern with the new medicine is about the loss of relationship. The EHR is not the enemy. It may be the enabler, but it is not the cause. I was a champion (and still am) of the EHR, but its unexpected consequences have had enormous impact on doctors and patients alike, both inside and outside the exam room, both at the office and now at home. I believe we can live with the beast, but we need to learn how to tame it. If we don't, our work will get harder and less satisfying, and we and our patients will miss each other even more. ◇

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Helping Haitian Amputees One Step at a Time

Drew Hittenberger, CP, BOCO

No matter where you are in the world, caring is a universal language, especially in the world of medicine. Your skills and knowledge touch so many people in need, and when you do what you do with love, you make a difference. My recent trip to Haiti to teach prosthetics was no exception. It was a journey that created hope, smiles and lasting friendships.

I have volunteered my prosthetic and orthotic services throughout the world: Soviet Russia with their returning Afghanistan veterans in 1989; Nicaragua following the revolution in the 1980s; Mexico, Poland and Western Europe in the 1970s. Each time I have returned home realizing that people are the same. They are good and deeply grateful for the services and knowledge that you share.

In March 2014, I attended a benefit in Seattle for Mobility Outreach International, a nonprofit foundation whose mission is to provide mobility to those in need throughout neglected areas of the world. It was started more than 25 years ago by Dr. Ernest Burgess, a pioneer in amputation surgery, as a modest clinic in Vietnam to assist landmine victims with their prosthetic needs. Since then, Mobility Outreach has become an international organization, providing orthotic and prosthetic care and orthopedic clubfoot treatment throughout rural communities of the world. It now operates 47 clinics in Vietnam, Bangladesh, Sierra Leone and Haiti, and it has made a critical difference in the lives of more than 20,000 men, women and children.

Following the benefit in Seattle, I accepted an invitation to participate in a November 2014 trip to Haiti to instruct prosthetists in fitting and in fabrication techniques. Haiti is still reeling from the effects of its devastating 2010 earthquake, which killed an estimated 316,000 people and injured many more. The world was ill-prepared for such devastation. Relief came from the Red Cross, the United Nations, and several countries, but only after the initial damage and triage had taken place. For the most part, people were left to fend for themselves amid the rubble, as the world watched.

After several weeks, prosthetic centers were established in mobile shipping containers and sent to Port-au-Prince, Cape Haitian and other communities. These containers, commonly known as "clinics in a can," were equipped with a laboratory, supplies and equipment. Health professionals fit prosthetics and performed physical therapy in these clinics. Unfortunately, importing components and services does not provide a lasting prosthetic solution, especially if money is limited.

In contrast, Mobility Outreach set up a permanent clinic in Cape Haitian and partnered with local talent to provide sustainable care. They trained local prosthetists, orthotists, physical therapists and orthopedic surgeons and combined this knowledge with local technology to produce results. As Marion McGowan, executive director of Mobility Outreach, observes, "You don't need the most advanced technology to make the greatest impact." Sustainability and knowledge are more important.

Many organizations arrive upon a disaster situation only to leave without a way of providing continuous care. A quick flash-in-the-pan approach doesn't work because it isn't sustainable. It fails to recognize that healing requires time, understanding, dedication and knowledge. When organizations do recognize these requirements, they can not only improve a situation, but also sustain that improvement. Healing begins from the inside, from the desire to learn, and from a commitment to change for a better future.

When our Mobility Outreach team landed in Cape Haitian, I soon realized where the expression "Hot as Haiti" comes from; but I would rephrase it as, "If you ever want to sweat like you never knew you could, go to Haiti." Stepping off the plane, I felt like a bar of milk chocolate on the hood of a black car parked in the hot afternoon sun.

We were greeted at the airport by a surge of people wanting our business and eventually jumped into the back of a hotel pickup truck. Sitting on our bags and holding on with both hands, we made our way to the hotel. We drove by throngs of people in the streets, through open-air markets, down narrow streets with motorcycles carrying two or more people within inches of our rear tires at 40 miles per hour. Horns blared at each intersection, as if to deter a sudden unforeseen side impact or possibly

Mr. Hittenberger, a certified prosthetist and orthotist, is CEO of Hittenberger Orthotics and Prosthetics.

Amputees playing soccer in Port Haitian.

to avoid hitting one of the pedestrians running in front of us. With our eyes open wide, sweat glands pumping, our senses working overtime, and smiles plastered on our faces, so began our journey.

Our job was to meet with the local people, evaluate their clinics, and teach and treat patients. We also wanted to see firsthand what Mobility Outreach was providing. They have set up a prosthetic clinic that is fully equipped with tools and equipment for fabrication of prosthetics. It includes a patient casting area, equipment for mold modification, and a fabrication lab.

While other prosthetic clinics obtain special prosthetic components from the Red Cross or other sources, Mobility Outreach has elected to make their own with the help of local suppliers. They obtain leather from one supplier, go down the street for rubber or wood, or hire a local welder, each time building relationships within the community. They are continually investing in each affected region. That level of sustainability within the community makes Mobility Outreach unique.

One example of investing in the community occurred when we visited a salvage yard and bought a screw car jack. We had it modified by a local welder into a press to make prosthetic ankle blocks from recycled plastic. Simple, local technology—rather than high tech—is often the solution.

We also visited several clubfoot clinics affiliated with Mobility Outreach at Justinian Hospital in Cape Haitian and Sacre Coeur Hospital in nearby Milot. It is estimated that 200,000 children are born with clubfoot each year, and 80% of them are in developing countries. The orthopedists in Milot and Cape Haitian are being taught the Ponseti method of treatment, which involves a posterior release, serial casting and orthotic treatment. They have established weekly casting clinics where the casts are changed and improvements are measured. The orthoses are then fabricated locally and fit in their clinics

The local health care workers were thirsty for knowledge. I showed them how to cast for an above-the-knee prosthesis, discussed various designs, did measurements, and performed a hands-on casting demonstration.

One of the highlights of our trip was watching amputees play soccer in a vacant lot filled with dirt and rocks. The game soon became a city-wide event, with people watching in amazement and cheering on the players. With crutches flying, bodies lunging, and constant running up and down the field, just trying to keep track of the ball was difficult. At that point, I began to ask myself what really makes someone handicapped.

The days flew by as the relationships strengthened. We made a difference in the lives of those who suffered in the earthquake. The situation is better now, but we still have a long way to go.

Looking back, it is evident that when you combine philanthropy, knowledge and care, you create a gift that restores hope and makes the world a better place. I encourage all those who might be interested to volunteer and make a difference. Give from your heart. ◇

Email: drew@hittenberger.com

To volunteer with Mobility Outreach International, visit www.mobilityoi.org.

For more photos of the Mobility Outreach mission, visit bit.ly/hittenbergerinhaiti or www.hittenberger.com/education.

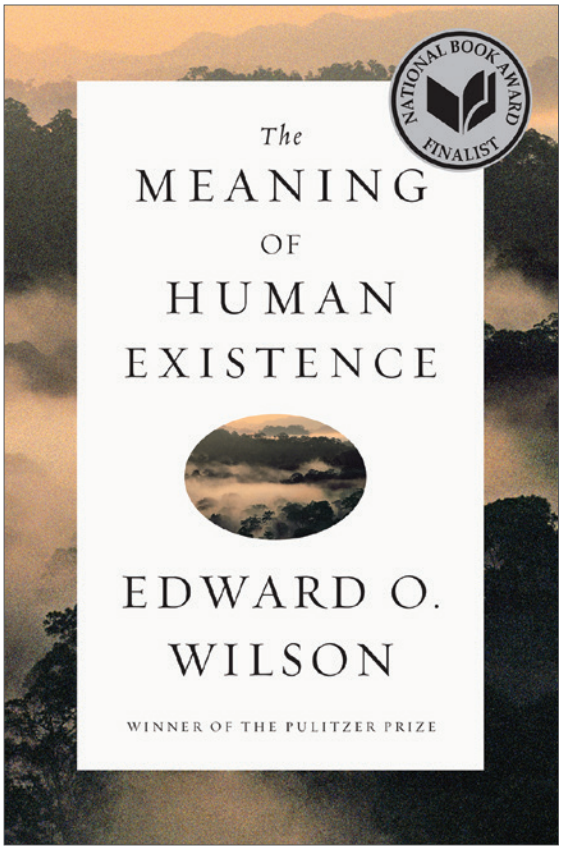
Enlightenment for All Tribes

Brien A. Seeley, MD

The Meaning of Human Existence, E.O. Wilson, Liveright, 208 pages (2014).

To paraphrase "My Guy," the 1964 Motown hit single by Mary Wells:

Nothing you could say
Can tear me away from my tribe.



Imagine you could have a private dinner with one of the greatest minds the world has known. Who would you choose? I would choose someone who is not only a great intellect, but who is kind, self-aware, articulate and circumspect. I think I might choose renowned biologist E.O. Wilson. Wilson is much more than a scientist; he is a natural philosopher. Reading his books is like listening to a wise, oracular professor.

Wilson's latest book, *The Meaning of Human Existence,* may turn out to be his magnum opus. Each re-reading reveals deeper meaning and evokes greater appreciation of his eloquence and transcendent ideas. This guy gets the big picture. And he wants us to get the big picture before it is too late. We are talking about planetary destruction and survival of humanity here.

Wilson's most compelling message in this book relates to self-understanding. He attributes this uniquely human capacity to our socially intelligent brain, which resulted from the co-evolution of genes and culture. He wants all humans to self-understand their true origin, their commonalities (both strengths and weaknesses), and their future possibilities. The human brain will not only continue to solve the mysteries of science, says Wilson, but also endlessly create stories, music and images to enrich our collective consciousness. He sees the future melding of science and the humanities as a second coming of the Enlightenment and explains why this must happen. He forecasts that science will grow asymptotic to a ceiling after completing its exponential expansion, but that the humanities will go on and on, indefinitely expanding what makes humans unique in the universe.

Wilson describes our universe in terms of its many continua or spectra. He wants readers to see where humans fit in the big picture of the cosmos and in Earth's biosphere. Part of this view is to marvel at how humans, relative to so many other species, are sensory cripples. Our nervous systems are largely ignorant of the nuances in the chemical world of pheromones, as well those in the continua of temperature, acoustics and electromagnetic waves that other creatures can sense. We should understand humans as imperfect organisms, writes Wilson, not perfections of "intelligent design."

By comparing humans to what extra-terrestrials might be like, Wilson sheds more light on why we are the way we are. The major advantages of bilateralism, big brains, omnivorousness, dexterous limbs, rapid audio-visual awareness (rather than slower olfactory sensing) and social intelligence would, says Wilson, be likely to evolve in alien life forms in other galaxies.

There is a definite element of sanctity in Wilson's secular reverence for the colossal diversity, complexity and beauty of our world. Wilson the scientist has an unmistakable streak of kindliness, and this book seems to be his way of saying, "Make love, not war." He also wants readers to know that science geeks actually can dance—that they not only enjoy music, art and literature, but think poetically when people aren't looking.

Dr. Seeley, a Santa Rosa ophthalmologist, serves on the SCMA Editorial Board.

Wilson asserts that our humanities and humanity itself are primarily derived from the stories confabulated by trillions of neuronal connections in our brains. He locates the self as "the central dramatic character in the confabulated scenarios . . . passionately believing in its independence and free will."

We innately love stories, gossip, myths and circuses, says Wilson, the more fantastic the better. We are drawn together by our shared stories and the films, art, dance and music that accompany them. Indeed, the motion picture industry could help convey and organize the self-understanding that Wilson advocates. Films like "An Inconvenient Truth," "Merchants of Doubt" and "The Russian River; All Rivers" can help spread educated and scientific responses to the forces causing environmental degradation.

Wilson says that the ubiquity of religious creation stories involving a world parent, an emergence from chaos, supernatural beings and fantastic events are the result of our strong instinct to form groups—the very instinct that allowed humans to succeed over all other species in dominating the Earth.

The yearning to belong is innate in all humans; but ganging up can be bad in many ways, says Wilson. Feelings can be hurt just in picking players on sandlot teams. Violence breaks out between groups at NFL tailgate parties. Corporate tribes' self-serving efforts destroy the environment. Much larger examples like ISIS and Nazism underscore the concern. "Religious warriors are not an anomaly," warns Wilson.

Wilson acknowledges the many positive benefits of religion as host to spirituality and source of good working principles for civilized behavior. He deconstructs faith thusly: "Faith is biologically understandable as a Darwinian device for survival and increased reproduction." He goes on to observe that "the instinctual force of tribalism in the genesis of religiosity is far stronger than the yearning for spirituality. People deeply need membership in a group, whether religious or secular."

According to Wilson, tribalism has a harmful side, and he cites religion as a ubiquitous expression of it:

> The great religions are also, and tragically, sources of ceaseless and unnecessary suffering. They are impediments to the grasp of reality needed to solve most social problems in the real world. Their exquisitely human flaw is tribalism. . . . It is tribalism, not the moral tenets and humanitarian thought of pure religion, that makes good people do bad things.

Wilson sees these evils of tribalism as reason to place all creation stories on trial. But telling religious people that their creation stories are dubious only produces ferocious resentment, not enlightenment. Knowing this, Wilson instead calls for wider teaching of the prevailing cosmological model of the origin of the universe, along with Darwinian evolution. He goes further, inverting religious tactics by asserting that denying our scientifically known origins is what should really be considered blasphemy. Reducing the percentage of Americans who do not accept organic evolution (46%) would represent what Wilson calls a reduction in "parasitic load" that will help ensure the survival of the planet.

Wilson's exasperation with scientists who cling to creation stories rather than the well-proven science of natural selection seems reasonable. Darwinian evolution and natural selection are surely taught in every reputable college biology curriculum in the Western Hemisphere. And every medical school likewise teaches the phylogeny of humans. So we might expect physicians to uniformly accept evidence-based evolution as observable fact. If ever there was a tribe that ought to teach and defend evolution, it should be the medical community. With education from that community, people can make informed decisions and vote intelligently.

On the topic of using gene implants in volitional selection, Wilson recognizes priorities: "First on the agenda is the correction of the more than a thousand genes for which rare mutant alleles have been identified as the cause of hereditary diseases." But Wilson knows that this new volitional creation process would be a slippery slope and would spell the end of natural selection. He writes, "I hereby cast a vote for existential conservatism, the preservation of biological human nature as a sacred trust."

Wilson realizes that tribes would soon not just implant the genes for honor students and concert pianists, but would also likely aim to create uber physical specimens: terminator warriors. To whose tribe will they belong? Will they compete with future intelligent robots? Hence Wilson urges that humans first become a global tribe with real self-understanding—a tribe of highly educated, peace-loving, tolerant, planet-protecting believers in science. ◇

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Dear Colleagues:

Although 2014 will long be remembered as the year that all modes of practice and specialties of the House of Medicine came together in a group effort to defeat Proposition 46, it is imperative that we maintain the momentum we have gained as we confront the issues of the coming year and beyond.

Following such a historic year, I would like to take a moment to reflect on what we have accomplished and what we can look forward to over the next 12 months.

I have, for over three decades, been a firm believer in the institution of organized medicine and the good that we can accomplish with unified action. As the President of the Humboldt-Del Norte Medical Society and Chair of the Council on Legislation, and in my time as Vice Speaker and Speaker of the House of Delegates, I have seen you all accomplish remarkable feats together. Whether it has been determining our stance on the sweeping changes of health system reform; combating unwarranted extensions of allied health professionals' scope of practice; fighting for access to care; working to ensure the practice of medicine is dedicated to patient welfare rather than the insurance bottom line; redefining Medicare geographic payments, and on and on; we have been able to get all this done because we work together for the benefit of all.

Our political power was evidenced this November when we handed the trial attorneys' Proposition 46 an unprecedented two for one electoral defeat, in conjunction with an unparalleled coalition across all party and advocacy lines. We distributed over three million lab coat cards, hundreds of thousands of patient brochures, posters and yard signs all over the state, mostly because of the ground game we mobilized.

Such a victory would never have been possible if not for the dedication we all had to one another and to the future of the practice of medicine.

It is indeed a great honor to follow in the footsteps of Richard Thorp, M.D., who as last year's president led an incomparable team effort to victory, not only with Proposition 46, but also the other battles and challenges we faced.

So what does that mean for the year ahead?

Already, the California Medical Association (CMA) has been involved in a public launch to increase the tobacco tax in California. We currently stand 47th in the nation in that regard. A broad coalition of public health advocates will be working all across the state. This action may end up being a legislative effort, or perhaps a ballot initiative, but we will be pressing forward this year.

We know that as millions of citizens are signing up for health insurance coverage, it is more important than ever to ensure that they have real access to quality medical care, not just a card promising care without the infrastructure to deliver. To that end, CMA has been working with partners to educate physicians and patients about their choices.

Many other issues are sure to arrive in the coming year; they always do. As a group, united, we can accomplish great things, as we have already proven.

I look forward to working with you all in the exciting new year.

Luther F. Cobb, M.D.
CMA President

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GET INVOLVED!

PASSPORT

TO PARTICIPATION

To encourage physician collegiality and advance community health, the Sonoma County Medical Association's new **PASSPORT TO PARTICIPATION** program acknowledges SCMA members who participate in SCMA, CMA, and community activities.

You can earn points as described below, and you will be recognized for your exemplary involvement at the 2015 Wine & Cheese Reception. The SCMA member who earns the most points will receive an iPad.

Earn points for participating in SCMA-sponsored activities! (One point for each activity.)
Examples include:

- Appointment to the board of directors and/or a committee.
- Attending a board or committee meeting.
- Participating in a survey.
- Voting in the annual election.
- Nominating a colleague for a physician award.
- Attending the Annual Awards Dinner.
- Attending the Wine & Cheese Reception.

Earn points for participating in CMA-sponsored activities! (One point for each activity.)
Examples include:

- Being elected or appointed to a CMA delegation, committee, council or similar groups.
- Participating in caucuses and Technical Advisory committees.
- Attending the Legislative Leadership Conference.
- Attending the Health Care Leadership Academy.
- Attending the House of Delegates.
- Signing up to be a Legislative Key Contact.

Earn points for self-reporting community activities! (One point per hour.)

- Participating in a community event, such as iWalk and events at the Center for Well-Being.
- Communicating with a legislator about a health-related issue.
- Volunteering your medical services at free clinics or health fairs.
- Representing SCMA through media interviews or serving on the board of directors of a nonprofit organization.

Submit brief description, date, number of hours, and location to Rachel at SCMA.
For more details, contact Rachel Pandolfi at rachel@scma.org or 707-525-4375.

Bon voyage!

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COMMENTARY

Vaccinations: What Are You Doing for Others?

Maria Pappas

Since the December measles outbreak in Southern California, the issue of vaccinating children has been discussed by numerous stakeholders, including parents, clinicians, public health officials, school administrators and politicians. We are experiencing this type of outbreak because of the increasing number of children who are not vaccinated against preventable diseases. What can be done to lessen the likelihood of such an outbreak in our communities? Getting more parents to vaccinate their children is at the heart of the matter.

Physicians and other health care providers have played a crucial role in helping parents understand the need for vaccinating their children and have been successful in many cases. In addition, Sonoma County's Department of Health Services is keenly aware of the need to have more parents decide to inoculate their children. The department has served as a tremendous resource for information explaining why children should be vaccinated, when they should receive the various vaccinations and where the shots are administered in Sonoma County.

Many parents, however, still choose not to vaccinate their children. According to one study, the most frequent reason for non-vaccination was that parents were concerned that the vaccine might cause harm to their child.[1] Further, parents believed that the risk of having their child contract a vaccine-preventable disease was low. With these instances of vaccine refusal, the individual risk of disease has increased, as well as the risk of disease for the whole community.[2]

So how can these parents shift their behavior and follow their health care provider's recommendations? Would they be willing to make an even larger shift and help contribute to the safety of the community through their actions? Interestingly, researchers have found that describing the critical societal benefit of vaccination and achieving community immunity is not successful in changing these parents' behaviors.[3] However, being a part of those parents' network in the broader community has been identified as an influencing factor for vaccination decisions.[4] Now is the time to engage with these parents and have them consider how their individual action has an impact on other people around them. Would any parent willingly endanger another child, a child too young to receive a vaccination, or a child whose health is already compromised?

For this shift to occur, a different type of dialogue needs to happen. We need to focus on an ethical and moral compass that is centered on others. As Dr. Martin Luther King observed: "Life's most persistent and urgent question is: 'What are you doing for others?'" Our world is made up of interconnected systems that must be thought of in a holistic way if we are to make this change in how parents care about the health and well-being of others. What we need is a change in an individual's behavior.

In their book *The Heart of Change*, John Kotter and Dan Cohen observe that to succeed in making behavioral change we must find ways "to help others see the problems or solutions in ways that influence emotions, not just thought. Feelings then alter behavior sufficiently to overcome all the many barriers to change."[5] By appealing to their sense of altruism and "doing something for others," we may be able to convince these parents to extend their focus from one child to all the members of the community in which they live.

The decision to vaccinate a child needs to be considered as not just a single action that leads to one child's protection, but that taken together will protect all children. With thoughtful engagement between the numerous stakeholders involved in the vaccination challenge, we will emerge with a better understanding of one another and a strengthened, vaccinated community. ◇

Ms. Pappas is an organizational development consultant based in Santa Rosa.

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Collective Resiliency

Rob Nied, MD

Collective resiliency is fundamentally how people get through difficult times. Together we find support, commiserate, seek sustainable solutions and become empowered to make positive change. Physicians are no different. Though we come from many backgrounds, have diverse specialties and practice in many varied settings, we can only continue to survive and even thrive by acting collectively. Yet, only 55% of practicing Sonoma County physicians with an active California medical license belong to the Sonoma County Medical Association.

There are, of course, many physician and professional groups asking for our participation and financial support. The draw of your specialty society, either local or national, can be strong and feel more in line with your practice and professional needs. To have real influence, however, we need a larger, universal voice. As a component medical society of the California Medical Association, SCMA benefits from the collective power of 40,000 physicians.

Last year was arguably the most successful for CMA and SCMA in decades. The singular voice and focus of CMA led an unprecedented coalition to a resounding defeat of Prop. 46, thereby protecting MICRA and affordable, accessible health care in California. The Medicare "GPCI fix" (geographic practice cost index)—which only happened in California—will increase payments to physicians in 14 counties by $50 million annually. In Sonoma County, we will see increases of 5–9%. And we are about to see the most divided Congress since the Civil War come together with bipartisan, bicameral support to repeal the SGR (sustainable growth rate) formula for Medicare. No specialty society or single physician group could have accomplished any of these things.

And yet, despite these very public and tangible victories, SCMA and CMA membership declined in 2014 and so far in 2015.

Has the cost of membership become prohibitive? Membership dues have not increased since 2009. The saved costs of malpractice insurance and increase in Medicare payment rates alone will more than pay for your membership for years to come. For small group and individual physicians, many tangible benefits also justify the cost of membership. There are discounts on Epocrates, free downloads of practice management software, and up to 80% off on office supplies and equipment. Collectively, the potential savings are greater than the annual dues. The CMA On-Call legal services and Health Law Library have over 4,500 pages of up-to-date legal information. In the past three years, CMA's practice management experts have recouped $7 million from payors on behalf of physician members.

The truth, however, is that most of the value of organized medicine is realized universally regardless of membership. There is an interesting parallel with the anti-vaccine movement. Sonoma County's childhood vaccination rate has fallen to 82%. In some parts of Sebastopol, more than 40% of elementary students claim a personal exemption waiver. This high rate isn't due to a lack of access, parental ignorance or parents not loving their children. Anti-vaccine adherents, through the prism of their world view, make a reasoned, if misguided, decision to rely on herd immunity rather than take any perceived risk themselves. The recent pertussis and measles outbreaks demonstrate that when enough people make that decision, however, the collective benefit breaks down. With membership down 26% in the last 15 years, we are approaching that tipping point for SCMA.

As detailed in its mission statement, SCMA—now more than 150 years old—"welcomes all physicians, respects diverse interests and acts as a unifying force in the community." While insurance plans or hospital systems may be competitors, the physicians in this community, especially those in SCMA, have done a remarkable job of remaining true to that ethic. For that we can thank our past presidents—such as Dr. Paul Marguglio, Dr. Bob Schultz and others—who reminded us in times of doubt and crisis that SCMA is "our organization, our society." In a big tent, not everyone will be in agreement on every topic; but no matter how disparate our views or positions, we will always share one element that unites us: our patients.

Membership in SCMA means real participation in the political discussion, protecting our value as physicians, building a more stable and prosperous practice, promoting a healthier community, and enjoying the collegiality of our physician community. But ultimately it comes down to this: Do you believe in our collective resilience? Keeping SCMA and CMA relevant into the next decade will require us to believe at a personal, emotional level that the answer is emphatically yes. We are better together. Be proud of your membership. And bring along a friend. ◇

Dr. Nied, a family and sports medicine physician at Kaiser Santa Rosa, is president of SCMA.

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